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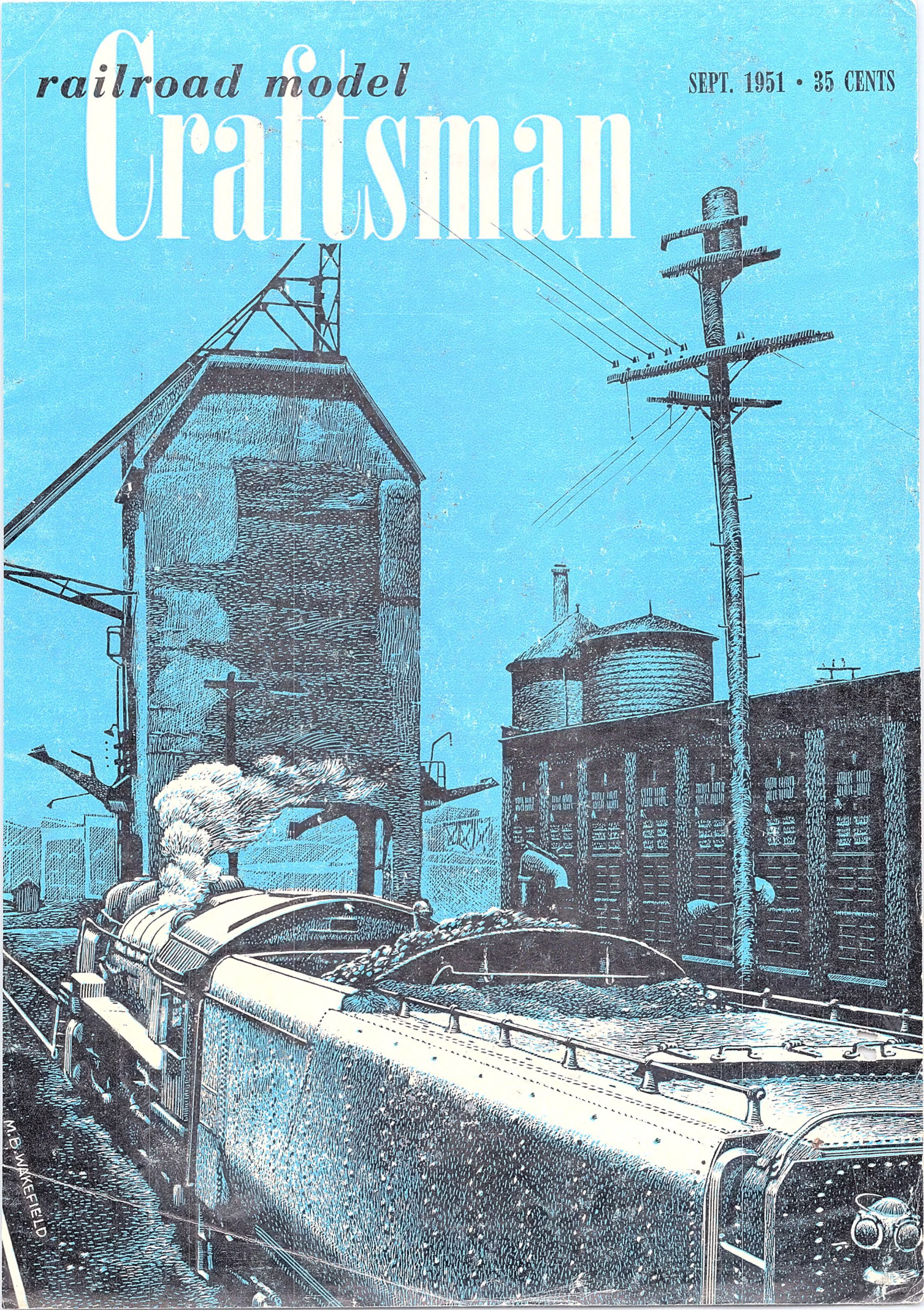

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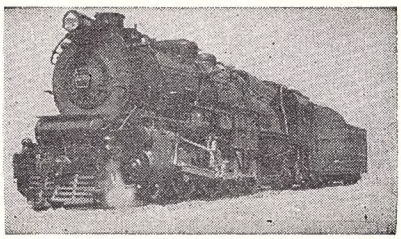

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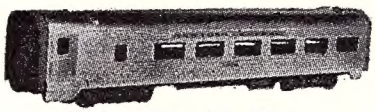

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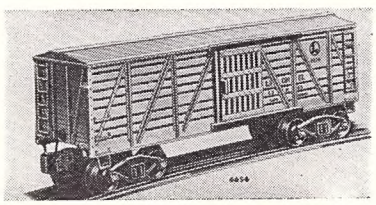

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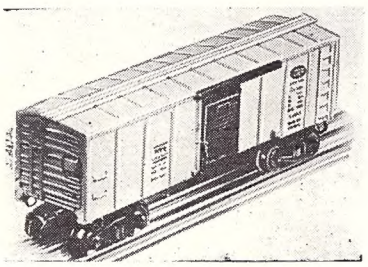

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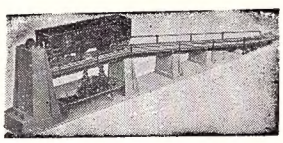

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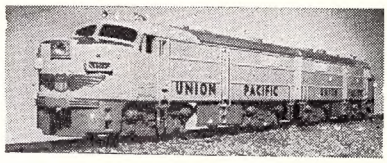

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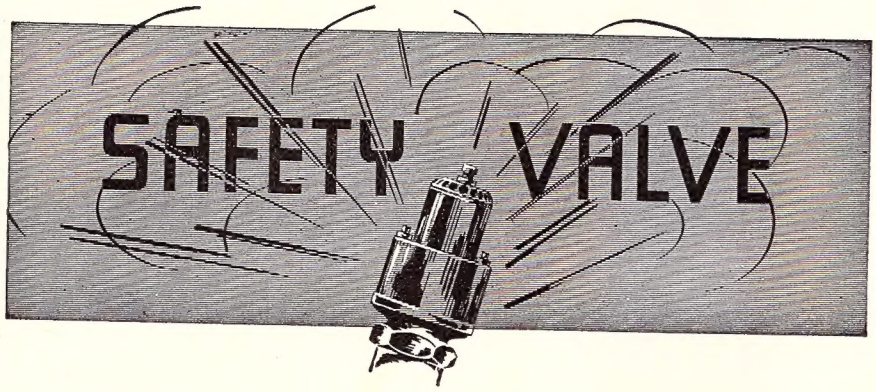
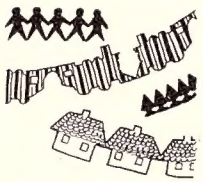


A Cardboard Locomotive —Never!

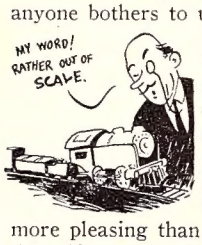


A cardboard engine! Now I've seen everything! Your article on Little Louie (July issue) is an insult to model builders. If a man can't work in brass, then let him stick to engines built from kits. Next thing you know we'll have engines made of modeling clay. . . . *Cliff Olson*

Eds. Note: Although much maligned by some model builders, cardboard actually is quite suitable for many purposes, especially in the smaller gauges. Many years ago, in the old Model Craftsman, Eric LaNal described an engine with a mailing tube boiler. He went further and described passenger trucks with cardboard side frames . . . and they worked too! But the article on "Little Louie" specifically stated that it was a cardboard mock-up of a locomotive later to be built from metal . . . yet in cardboard and wood, it looked like an engine and actually could be used as one since the underbody was built from standard commercial parts.

He Likes 'em Big and Bulky

A. R. Martin, who wrote on 017 scale in your July issue should compare it with standard O (¼"). It isn't just a matter of 1/64". A Pennsy K-4 is ¼" higher in 017; an 80' passenger car is 1¼" longer, and there is considerably more overhang. I doubt very much if anyone bothers to use 17/64" timbers for 12 x 12's, but that isn't the point. The difference in a piece of rolling stock is considerable. There is something satisfying about bulk; a massive loco is immensely more pleasing than a slim-boilered model (no, I'm not going to use this as an argument against HO). The reason for 17/64" scale is the same as the reason for British HO. Over there, they use OO scale (4mm) but run trains on HO track (3.5mm). If British model rails can adopt a larger scale as standard, there doesn't seem to be much point to Mr. Martin's complaint. . . . *Alex Kask*



The Elusive Slip Switch

I've been reading model railroad magazines for many years and your article on Building a Double Slipswitch (in July) was the first one on that topic that I have ever seen. I've made a few abortive attempts to build such a switch myself, but contributed the results to the scrap drive. Now, thanks to Mr. Asquith's article, I have the nerve to try another one. Haven't started yet, but will let you know how I make out. I think it will be all right. Congratulations to Mr. Asquith on doing such a thorough-going job on such a tough subject. . . . *Harry McNeill*

A Triple Slip Switch

Does eating mashed and french friend potatoes at the same meal endow you with the ability to build a slip switch, as you imply in your heading to Milt Asquith's article on that subject in a recent issue? I'll admit that I've often eaten three or four kinds of sea-food at one meal, yet I am content to use standard switches just as they come from the box. I wouldn't have a double slip switch on my railroad as a gift. Nor a triple slip switch. Is there anything wrong with me? . . . *Reds Calloway*

Eds. Note: What *is* a triple slip switch? There probably isn't *much* wrong with you; all hobby addicts, model railroad and otherwise, sound a bit overwrought when discussing the technical aspects of their hobby.

Food For Thought

Some of my O gauge cronies (a seedy bunch) lament the high prices we pay for our equipment. O gauge car kits cost twice as much as comparable HO kits, sometimes more. Of course, part of this situation stems from a larger HO market. But, what I feel is far more responsible, seldom seems to be evident to modelers. Contrary to popular opinion, O gauge requires far more material than twice HO. For instance, one HO car side is one fourth the size of an O car side. Since the thickness of the HO side can be half that of O, eight times more material is required per side, not twice as much. . . . *Ernest Shute*

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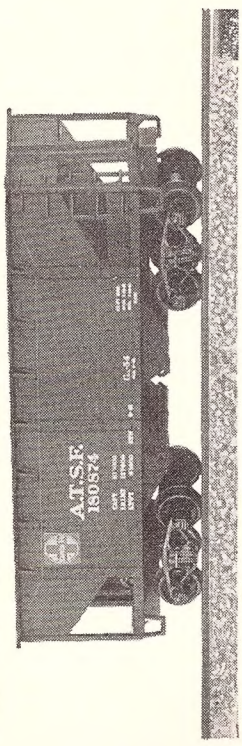

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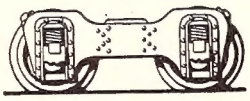
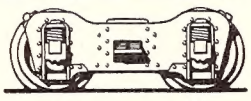


T-51 30-ton "Fox" for light freight cars. $1.10 pr.



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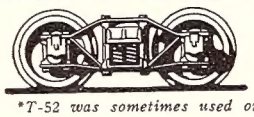

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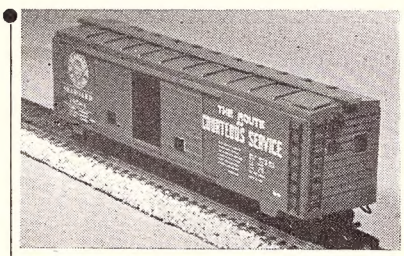

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Contents for September 1951

TWO PINT SIZE PIKES—By Bill Schopp and Bob Dangel 6
Similar HO layouts, both highly portable, but with wide variance in details.

VISIBLE LOADS—By Boyce F. Martin 10
Scrap material converted into highly realistic freight car loads.

UTE SHORT LINE—By Earl Cochran 12
An elaborate HO gauge pike which features timetable operation.

THE ELECTRA SWITCH MACHINE—By John Kemp 17
Installing and adapting the switch machine for more positive performance.

PICKLE CAR—By Bill Miller 18
An interesting piece of freight equipment built from scrap materials.

DIESEL SERVICING 20
Prototype fueling facilities, readily adaptable to modeling.

POWER MECHANISM FOR B, A & P ENGINE—By Long Valley Electric Ry. 22
An enclosed type drive designed for power, versatility and easy installation.

LAYOUT DESIGN TIPS—By Bill Schopp and Bill Livingston 25
Helpful hints necessary for a smooth operating model railroad.

YOUR NABOR'S PIKE 26
Model Railroad Equipment as built up by RMC readers.

ALONG THE TINPLATE TRACK—By Louis H. Hertz 28
A page from yesteryear, the 0-2-1 type.

THE SCRAP BOX 30

CONTROL PANEL LOCATION—By The Layout Doctor 30

OFF'N THE TABLE TOP—By Glyn Lewis 32

PLATFORM BENCHES IN HO 33

SAM, THE TROUBLE MAN 35

THE LAUREL LINES LATEST—By Gil Wessel 38

AGING WOOD AND CARDBOARD BUILDINGS 43

NEW PRODUCT INFORMATION 46

THIS MONTH'S COVER shows a Lehigh and Hudson River Hog moving toward the ash pits and roundhouse. The buildings to the right are a portion of the repair facilities at the New Haven's Maybrook (NY) yards. Drawing by M. B. Wakefield.

Published monthly by Model Craftsman Publishing Corp., Ramsey, N. J. Editorial advertising and executive offices, Ramsey, N. J. Charles A. Penn, President and Treasurer. Helen M. Penn, Secretary. Entered as second-class matter June 7, 1948, at the Post Office at Ramsey, N. J., under the act of March 3, 1879. Additional entry at the Post Office at Kutztown, Pa. Price 35 cents per copy. Subscription $4.00 per year in the United States and Possessions. Canada, Foreign and Pan-American subscriptions $4.50 per year. The contents of this magazine must not be reprinted without permission. Articles, drawings and photos are welcome. When requested, we will endeavor to return all material in good condition if a stamped envelope is enclosed. Unless stated otherwise by contributor, we will assume no remuneration is expected. Copyright 1951 by Model Craftsman Publishing Corp.

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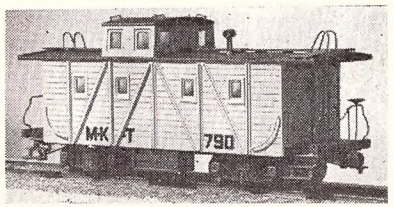

WOOD BRACED CABOOSE *(above) a grand old-timer, strikingly different and still used with the modern diesel. (Katy, RI, MP and WP prototypes). Kit No. TC504* 5.45

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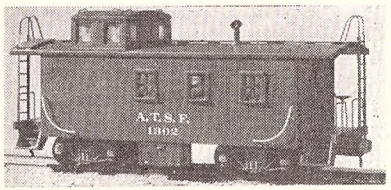
EAST & CENTRAL *areas will be familiar with this car. Currently used on the CNJ, C&O, FTW, NKP, N&W, PRR, O&W and others. Kit No. TC508* 5.45

STANDARD, *thruout country, plays no favorites. Found on UP, Erie, MP, Soo, W&LE, NKP, SAL, PM and NYC. Kit No. TC509* 5.45



FAVORITE, *from coast to coast, a distinct and ever familiar tail-ender on the SF (illustrated above) NYC, WP, UP, Frisco, D&RGW, CNW, Monon, CB&Q, Rutland, GTW, SNR, MEC, AC&Y, Millw., M&STL and others. Kit No. TC510* 5.45

UNIFORMITY *describes this caboose; cupola centered with four windows arranged uniformly on each side. Mid-west and Eastern type. NKP, NYC, B&O, LV, L&N, AC&Y, P&WV, GM&O and branch lines of the UP. Kit No. TC511* 5.45

SIDE DOOR CABOOSE, *old and unusual appearance, ideal for that short branch line and dual service. (T&P, CB&Q, RI, SF and MP prototypes). Kit No. TC503* 5.45

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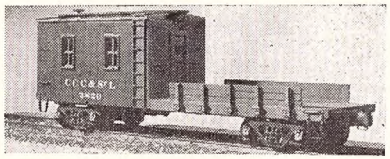
With cupola which is positioned off-center. Kit No. TC501 ..... 3.60

Symetrical design as used on PRR, Erie, C&O, NYC, Reading and many others. Kit No. TC502 ..... 3.60



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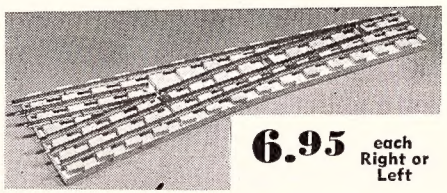

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These kits have been made with exacting care to bring you faithful reproductions of the prototype. ALL parts are included in each kit for a complete model. Side and end panels are a heavy card stock with all the rich color of the prototype delicately reproduced; fully scored, lettered with heralds, ready for assembly. Car roofs have been correctly milled from well seasoned basswood; floor, false sides and ends are also provided. Each kit contains a super-detailed cast underframe, fully drilled and machined, roof ribs, roof end walks, end braces, ladders and all other hardware parts including a pair of trucks which are fully sprung and accurately detailed. Yes, all the material you need, together with step--by-step instructions, to build a highly detailed model—a model you'll be proud to own. You'll want several of these eye-appealing cars; they'll stand out on your pike . . . and they are true to prototype. The following models are available (and note the vivid coloring):

Penna. Merchandise Car (Silver herald and lettering on dull red)

B&O Merchandise Car (Blue, Orange and White with large herald)

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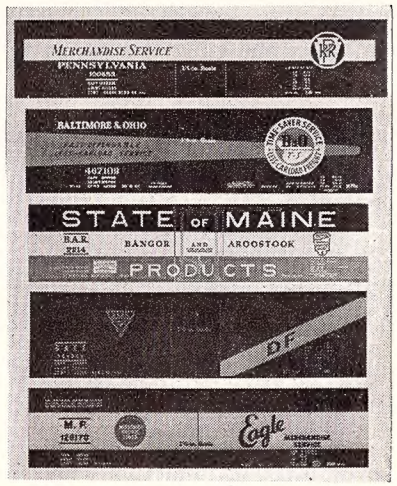
General American Evans (Gold lettering and herald on deep green background)

Erie (not shown) (Pullman Green, Orange lettering, Large herald)

Missouri Pacific Eagle (Blue and Silver with brilliant red herald)



O GAUGE SCALE KIT, *complete with sprung trucks* 6.25

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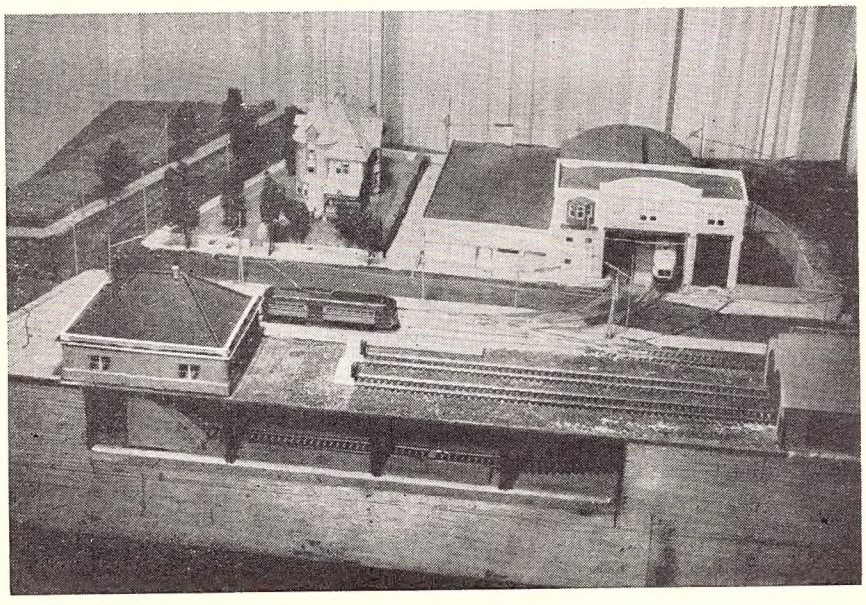
BODY KIT ONLY, *includes printed sides and ends, milled roof, floor, ends and false sides, wood underframe, roof ribs, walk and end braces, nails, escutcheon pins and instructions* 1.50

Bob Peare
ENGINEERING CORPORATION
Clifton, New Jersey

TWO PINT-SIZE PIKES



Overall view of Schopp's layout. L. to r., park, terminal, mansion, carbarn and factory.

When two fellows, 3000 miles apart, do the same thing at the same time, it must be good. A study of these pikes reveals the same basic plan, overhead and "pointless" switches, although they vary widely in details. A tiny layout of this type may be the cure-all for armchair-itis as very little material, time or space is required. Try one on your dining table.

by
BILL SCHOPP
BOB DANGLE

THIS portable HO gauge trolley layout was built by the writer for a Pennsylvania Scale Models exhibit at hobby shows. To increase its portability, it was made entirely self-contained in a three by four foot area with a total height, when folded, of 15". The frame was made somewhat sturdier than *you* might need if portability was not a factor, but I am going to describe it as built and let you skimp as you wish if you build one similar.

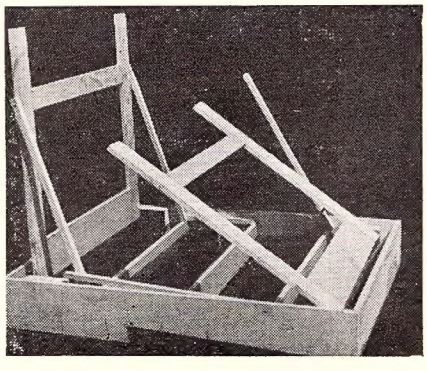
What better for an exhibition pike than some *action*—not just trolleys running around, but making meets under automatic control. A single track, inside out figure eight pattern was adapted, with two passing tracks, so that two cars could run at once in opposite directions under automatic control. The lower level of the "eight" was made to pass through a subway, where was located a subway-type station, or perhaps I should say a subway-surface type station as they call an underground trolley platform in Philadelphia, a slightly confusing term to foreigners! On the upper level, the passing track was at the front, an off-the-street terminal serving both that and the subway.

Several steps were taken to insure minimum maintenance of the trolley line, very important for exhibition work, but quite applicable to the home layout. First Atlas track was used for all trackage, since roadbed was not required and definite adherence to gauge was a must. Mantua, Trackmaster or Umpco track would doubtless have done as well. The switches were all made up by hand, as an integral part of the track, soldered solidly together. The switches had no moving parts and so needed no controls. They were of my back-through type wherein the depth of the flangeways at the stationary "points" regulates the direction the car will take: for practical purposes, they are the equivalent of a spring switch. For overhead wire, phosphor bronze cable was used, as sold by George Stock, which absolutely eliminates the bugaboo of *dirty wire* after days of inactivity on the line: the twisting strands seem to scrub the shoe clean which in turn scrubs the wire. It also is resilient and when knocked does not break or take on a permanent kink; it *gives* and goes back to the original shape. Wire frogs are quite workable in HO gauge, but they can be a source of dewirements, so only two were used at the entrance to the barn tracks. Double wire was hung all the way around the single track so that cars for each direction would use one wire. This eliminated the constantly used wire-frogs that would have been at the passing tracks. This has some foundation in prototype practice. 1/16" diameter line poles were used on the theory that they would provide more give; in fact that give entirely too much making it impossible to hand anything like neat overhead. I plan to rehang the trolley wire with 1/8" dia. line poles at the first opportunity.

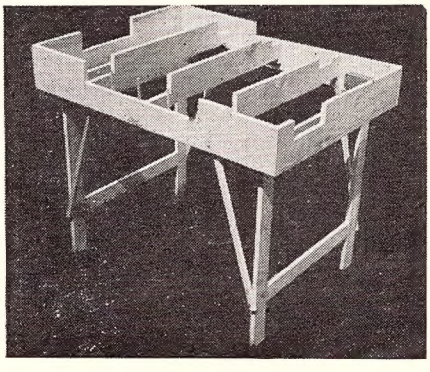
Two power packs, one for the railroad itself and one for the relays, were mounted underneath; the control panel was set into the side of the table; and a candy-box type of lid of masonite was provided, making the layout quite self-contained with the exception of the cars themselves which must be separately transported. Buildings were cemented and pinned down, or both, the masonite lid screwed down, two lengthwise battons screwed to the bottom held the folded up legs up inside, and four heavy "coffin handles" at the corners were provided to make lifting it on and off the top of a car a little handier.

The layout table itself, as shown in photos, is the culmination of a design worked out through RMC Layouts #1 and #2 and quite a string of pikes built for private individuals. As shown on the diagram, the two legs at each end swinging as a unit, pivoted on dowels which ride in pieces of 2x2x3 inch wood nailed inside the rectangular frame of the layout. One end's dowel is 1" up from the bottom edge, and the other is 2" up, so that legs, being made of 1" lumber (actually 7/8" thick) overlap when folded. They nestle up inside the table for transporting, the crosspieces being two inches shallower than the edge framework to allow for retraction of the legs. The legs at each end form a form of square or squared "A". They are made from lumber about 1 x 3", assembled with corrugated fasteners or dowelling.

For the sides, I figured on 7" wide pieces of lumber, but at some points you will find that it is marked 7 3/8" wide. This is because the basic top or baseboard of the layout is 1/2" thick Homasote board, but over the subway 1/8" Masonite (tem-



Tablework for layout above, showing how legs and braces fold in. A most rigid set-up.



View showing subway opening at front (note dowels) and control space to the right.

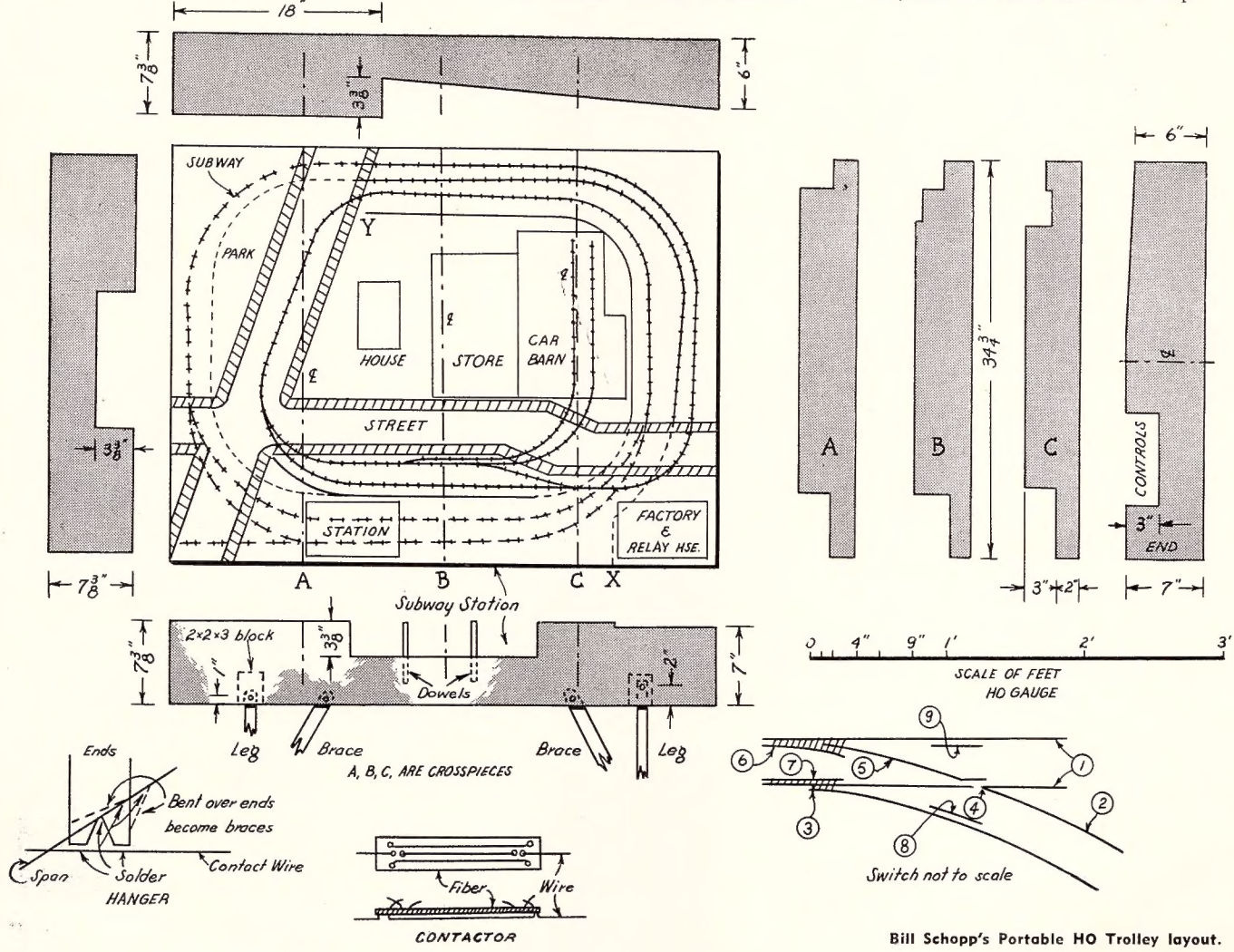
pered or soft) was used because of its thinness where overhead clearance was limited. The crosspieces we made from 1 x 5" lumber. Neither 1 x 7 or 1 x 5 (actual widths) lumber is available, but we used 1 x 8's and 1 x 6's and ripped them down on a buzz saw. The cut off "inches" (more or less) were saved and used for leg-braces and intermediate crosspieces under the layout where needed. The total cost of all wood and wallboard used, including the candy-box type lid, was around $10. while the carpentry work cost just under $30. more, not figuring my assistance in marking out the pieces.

Assembly of the woodwork resulted in an open top table such as shown in the photos. The neighbor's kids were mystified by it, guessing it to be anything from a pinball machine to some kind of racing game. The open top table was provided with roadbed and a top, all in one piece of Homasote. This was a 3 x 4' piece cut in a spiral shape starting at X, near the front right corner, and going around twice to Y at the rear left corner. The two left hand corners had to be cut back one inch to allow them to fit down inside the frame of the layout to provide a "floor" for the subway. When this piece of masonite was placed atop the open top framework, some slight adjustments were necessary, then it was nailed in place using large-headed nails. A continuous roadbed was provided for the track, except where the upper level crossed the lower in the front right corner. Over this short stretch, the Atlas track supported itself, and a piece of ⅛" masonite was slipped in to form the roadway.

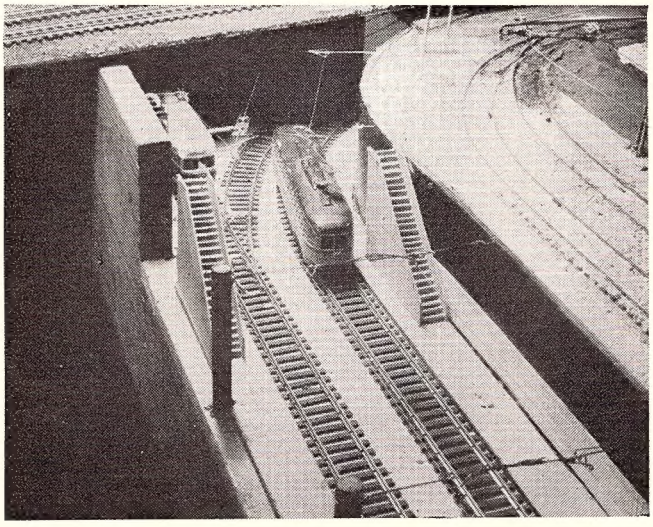
As cover for the subway, we used ⅛" Masonite formed in two pieces, plus one for the roadway bridge mentioned above. These were shaped from paper patterns made up on the job. Naturally they overlapped the Homasote slightly (maybe ½"), so the Homasote had to be notched to allow the subway tops to lay smoothly. To do this notching, we used a knife meant for cutting wallboard and linoleum and the job was very easy. It could also be done with a razor blade.

First step on the pike itself, once the table was done, was laying the track. With Atlas track, this went fast, except at the switches which were made up right on the job, since no control-less pointless switches are on the market. Another advantage of doing the job on the spot is that the numerous rail-joints near switches, so necessary when using commercial switches on any railroad job, are eliminated. *In trolley and other short radius work, elimination of these rail joints is very important since the sharp curves make them a prime source of derailments.* Each piece of track was run around the full curve beyond the switch or half way to the next switch if the track was straight. This necessitated cutting some pieces of track down rather wastefully, but was worth it to eliminate awkward joints on sharp curves.

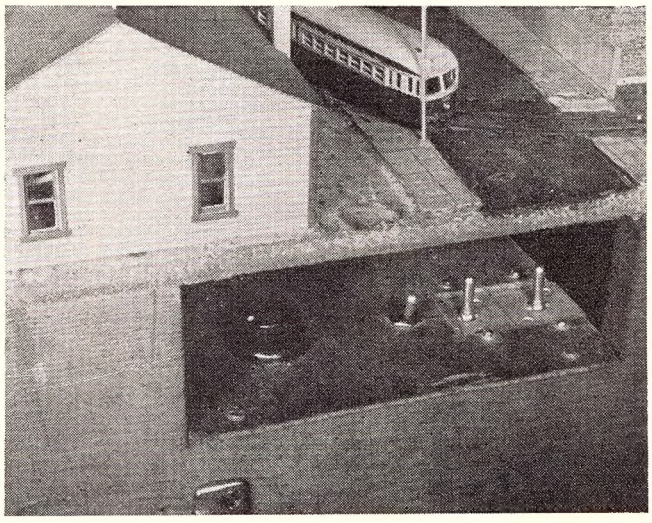
Although my "pointless" switches were described before in RMC, I will give them a brief once-over. The sketch shows the order of assembly of parts. The first track laid, through the site of the switch, should usually be the one on which cars run when facing the switch. The angular track trails in. It does not make a true curve in, but hits the main at a slight angle. Rail ends on this track are filed to fit snugly against the main line rail, then soldered. Track is spiked here and there. The one piece wing-rail-closure-rail-point is then shaped and spiked down. Guard rails are needed at both points. The flangeways at these are filled with solder, then rutted or filed or ground out so that the facing point direction ones are a little deeper. The cars trailing into the switch from the less favored branch line will bounce a little as they cross this solder on their flanges. Frog-guard rails may or may not be needed. The branch from which cars trail through does not need guard rails, and a straight track normally doesn't require them. Since all my switches would be in a subway or else covered by street, the tie-strip of the approaching track was cut off at an angle and let it go at that. For visible switches, you would have to remove all tie strip where the switch was to be, and use Atlas *switch* tie-strip.



Bill Schopp's Portable HO Trolley layout.



Close-up of subway with station roof removed. Effectiveness of underground line would have been increased by lights.



Control panel recessed into end. Rheostat and reverse switch to the left, spur track energizing switches at the right.

After completing the subway passing track and its stub siding and the top level passing track with its two barn sidings, the two levels were then joined up with inclined tracks at the rear.

The overhead wire was supported by both brackets and span wires on the uncovered parts of the pike, and by span wires hung from nails in the subway. Phosphor bronze wire was used for spans. At the upper passing track, poles were used on the inner side of the tracks only, resulting in two-track brackets. The method which I prefer of sectionalizing the *wire* requires sometimes that a span wire be insulated in the center by a piece of fibre punched with two holes through which the ends of the span parts are bent up. Wire contactors for the train control system were also made from fibre, punched, then completed with three square U's of wire each as shown in the diagram. The three wires of each contactor were electrically connected atop the fibre. Wire section insulators were made similarly without the central square U of wire, hence were shorter. Where the spacing of the outer square U's was too wide, the fibre was folded slightly, giving an inverted V shape.

The design of my hangers is also shown in the drawing; not too realistic looking, but very good for keeping the wire in place. After the wire is shaped as shown, it is held by the longer end and soldered to the span. Then the contact wire is soldered to both cars. On a curve these would be bent at an angle and not kept in a straight line. Then the ends were bent over (held with pliers just above the contact wire) and inward to be soldered to the span or bracket. These bent over ends formed braces. Sometimes they would be bent one way, sometimes the other, sometimes both ways, depending on the strain on the contact wire. Bronze wire was used for these, but stretched copper would also do and be a little easier to work.

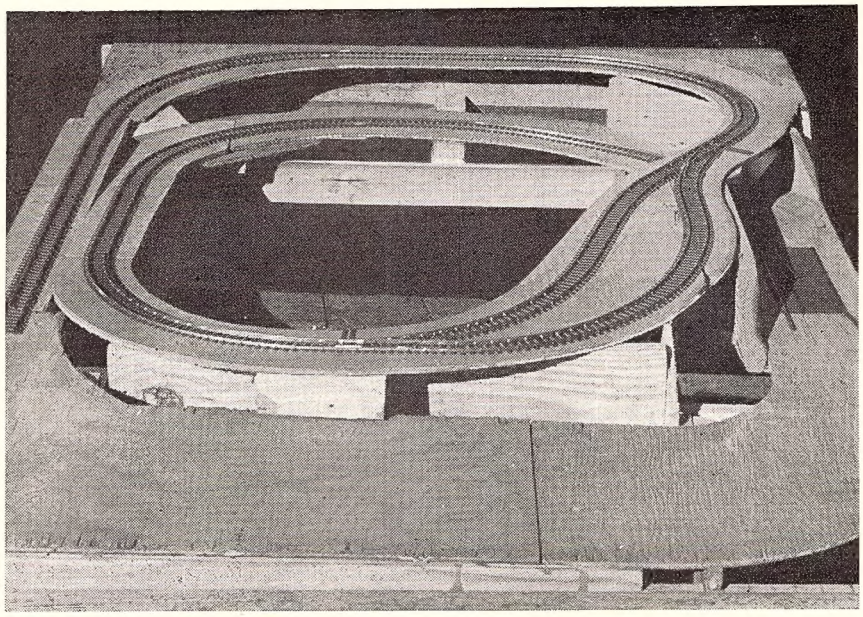
I also, incidentally, prefer stretched copper wire for overhead for ease of hanging, but the non-dirtying and resilient properties of this bronze cable far outweigh that feature. When the cable is cut, it unravels, so where a cut or bend is to be made, apply soldering flux, then solder. It may then be cut without ravelling.

The work of hanging the wire should be begun on a straight stretch and I chose the subway. Section insulators and contractors were added as work progressed. No wire frogs were to be installed except at the barn entrance, but they are easy to add. Just flow solder over the cable, cut it, bend up the ends, hook in the frog (Pittman's O ga. frogs do very well for HO) add a speck of solder to each upturned wire where it comes through the frog and there you are. "Cut the wire" implies you should know where to cut it and my answer is directly above or just ahead of the track frog. However on this pike, with only one-way operation through the switches, this site is of not too much importance. Where a wrongly raked trolley pole is to back through a wire frog just as the wheels back through the switches, the frog must be tilted up so that the high side is the side the shoe prefers to travel. The shoes used on the Penna. Scale Models trolley poles are not too adapatable for backing up unless the overhead is made very low. A completely round shoe would work better for backing purposes. This is hardly a criticism of the poles, since the normal direction of operation of a trolley is frontwards.

The pike worked fairly well from the start with minor adjustments to track and wire. Operation would have been improved if *three* passing tracks and a wye were included. Three cars could then have run at once and a car could reverse without resorting to the "big hook . . . *Bill Schopp*

Eastbay Electric

THIS HO Trolley portable model railroad is the climax of a series of attempts to build a small, simple, well detailed model railroad. My first attempt is something I don't discuss anymore. The second layout worked out well, but it had a few relays and switch machines on it and was a combination steam and

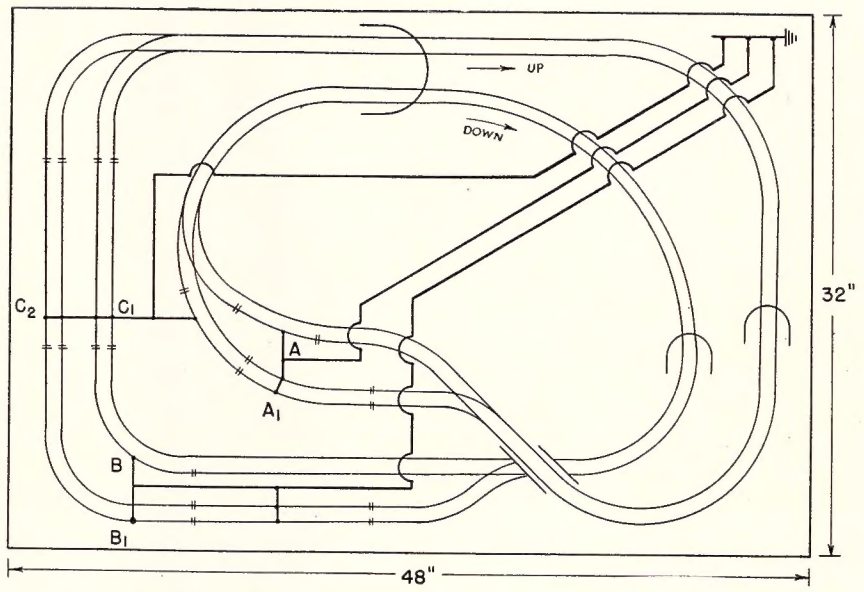


Dangel's pike showing plywood base. Atlas tie strip was used but rail was spiked down due to numerous guard rails. To save maintenance, switches have no moving parts.

trolley layout, so I decided to build this small portable trolley layout that fits on a card table. As I also wanted to make it as simple as possible, I planned to build a model that would operate three units in opposite directions automatically without relays, switch machines or the attention of the operator. In order to build a portable layout, it should be sturdy, light enough to handle, and it must fit into a car or some other means of transportation. This layout fits under the turtle back of a 1937 Plymouth Coupe with the lid down. The outside dimensions of this interurban trolley line are 32 x 48", and will fit on a standard card table with a couple of inches overhang.

The entire structure was built on an open frame work of ½ x 2" pine with interlocked corners, block braced, to give a light but strong frame. The track and trolley pole base was cut out of scraps of ¼" plywood and screwed down so the tension of the trolley poles would not pull the base up. The basic design of the track is a loop with two passing sidings; the loop was doubled up for an up and over design and in this way I was able to get in 25' of track on this small space without cluttering up the entire space with just trackage. Atlas Tie Strip, switch tie strip and brass rail were used; the switches were very simple in that they had no moving parts. Spring switches could have been used however dirt sometimes causes trouble.

All curves on this pike were guarded by full length guard rails; trolley cars will take very sharp curves and my sixty foot cars will take the 8" curves on this layout without any trouble. Electric power is picked up on the overhead by both trolley and pantagraph. Trolley poles are all of 3/16" brass rod, threaded at the base so they will bolt to the plywood base and not work loose. Overhead wire is made of #26 spring brass, both single arm and double pole suspension were used. The contact wire is hung from the span wire by what looks like insulators in the photos but are actually just Indian seed beads. The entire overhead system is made into one section, with a break in the tunnel. The two ends of the contact wires are connected to springs which maintain a certain amount of tension to the whole system; trolley wire is double on the single track and spreads out on the passing tracks, in that way wire frogs in the overhead are eliminated. Pantagraph or pole can be used; I keep the contact wire oiled and have little trouble with it. Maintenance of wire and track work is very small, but, like any other railroad, it must be cleaned once in a while. Cleaning in the tunnel is a job but can be reached through the back side of the tunnel and also by turning the layout upon its side; then, by putting my head in the mountain, I can maintain the wire and track without trouble. All the track and overhead wire was installed and in operation before any scenery work was started.

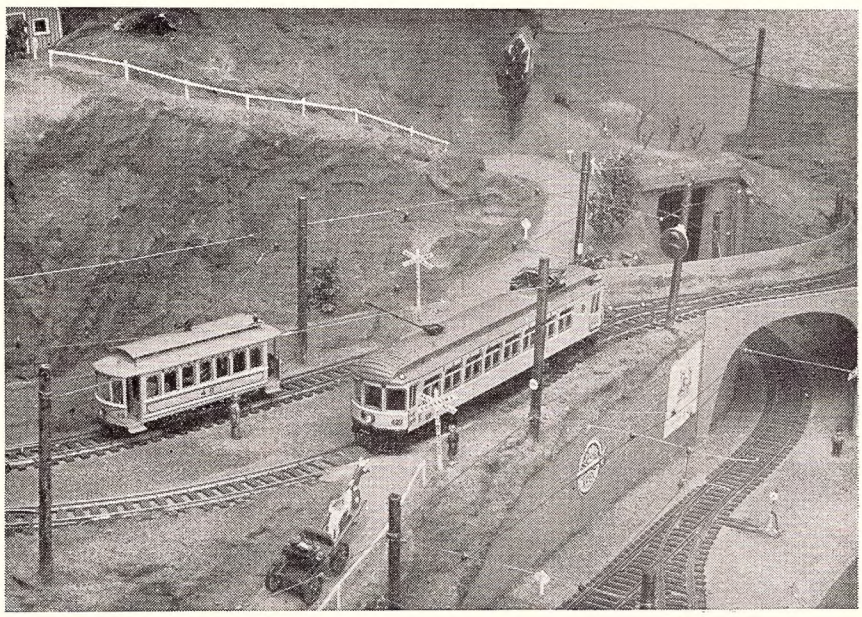


Layout design as used on pike described on this page. Completed in thirty days.

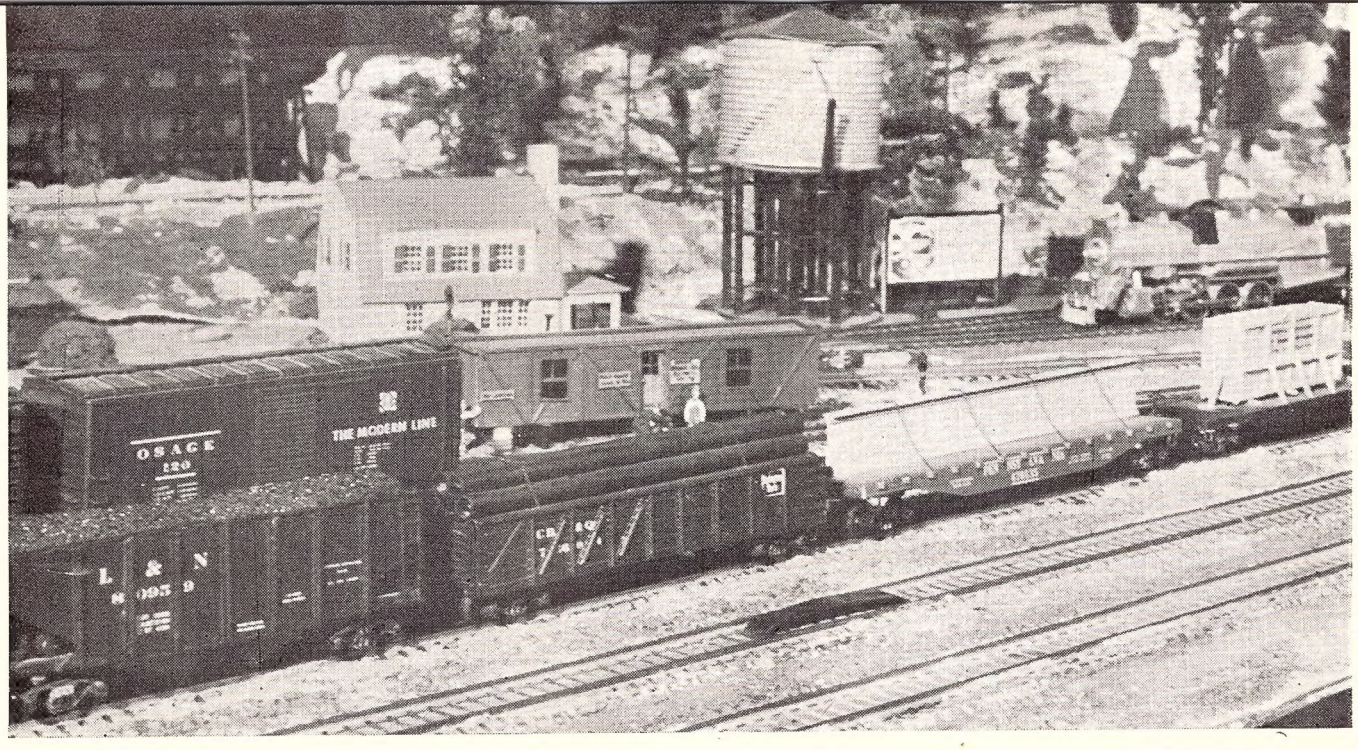
The scenery was made up of window screen, tacked and braced from underneath with wood blocks and strips. Red Top Fiber Plaster was spread on the screen and molded into the shape desired. I did have to be careful not to get plaster on the tracks or overhead, but it was readily done. After the plaster was dry, various colors of paint and enamels were used to color things up a bit. Enamels were used wherever flock was to be added because it made a more sticky surface. Buildings were made from kits and kept small.

The automatic operation is really very simple. Three cars can be run at one time; one unit running clockwise, the other two counter clockwise. To start the system in operation, place a unit in section A1 and in B1, facing counter clockwise. Place a unit facing clockwise so it will run into section A and turn on the power. The unit coming into Section A will complete the ground circuit through the wheels into section A1 and it will start A1 and move it up to section C2 and stop. The unit passing through section A will continue until it passes through section B, where it will complete the ground circuit for section B1 and stop in section C1. The unit leaving section B1 will go under the underpass and on around until it comes to section C where it will complete the grounds for sections C1 and C2 and will stop in section A1. The unit in section C2 will move up to section B1 and stop. The unit in C1 will move around until it passes through section A and will start the whole cycle again.

If I should want to run a single unit, it will stop when it comes to a section without a ground, so three snap switches are installed under the scenery in the tunnel where they can be reached from the rear. These snap switches are connected to a common ground on one side and to sections A1, B1, and C1 and C2, on the other side. With the switches open, units will run automatically; with the switches closed, single units will operate without stopping . . . *Bob Dangle*



A meet at the high-level siding. There's so much traffic on this live-wire line that old dobbin never gets across; it makes the comptroller happy but creates operating headaches.



The busy appearance of a classification yard is emphasized when there are pay loads visible on each track. Scene on author's HO pike.

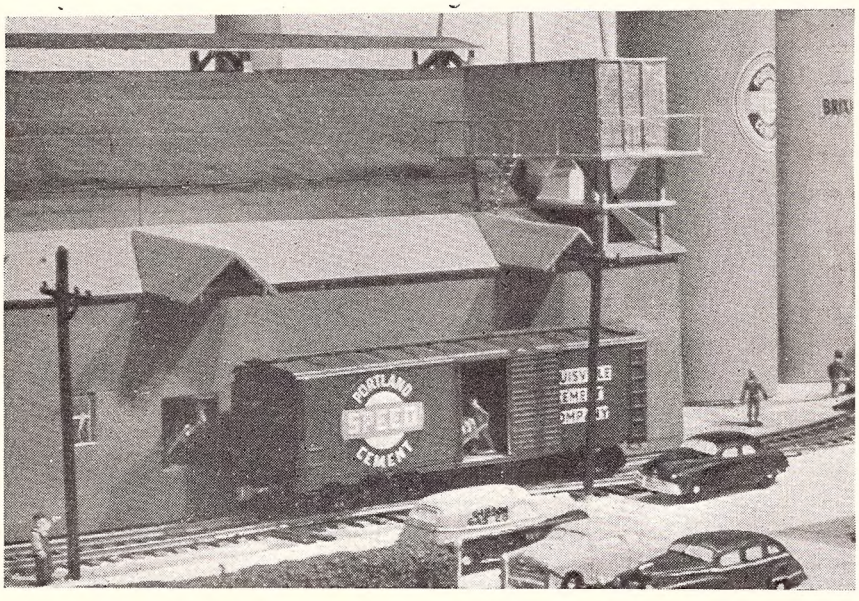
VISIBLE LOADS

Scrap balsa, wood strips, dowels and odd bits of rail will all make "Visible" loads when properly painted and finished. Ideal for a realistic atmosphere.

by Boyce F. Martin

ANY railroad modeler knows that the closer he approaches prototype realism the greater is the enjoyment derived from the hobby. For this reason, operations, timetables, meets, and train make-ups become more and more interesting if they are patterned after a real or imaginary situation. One of the ways to make model railroading more realistic is to model loads for the flat cars, gondolas and hoppers on the line. By having the load visible as the train is made up, the entire operation of a model railroad is made more complete. This desirable result is accomplished because the movement of a car from here to there, the grouping of similar loads, and, in fact, the generation and destination of traffic becomes a part of the whole model railroading scene, rather than merely an additional item on the manifest.

Those super-realists who are annoyed at seeing the same load on the same car can readily make the load removable, particularly in gondolas or hoppers. The cars can then be run empty back to their loading point, or loads can be switched to different cars. As in other areas of the hobby, the matter of loads is one for individual taste and adaptation to the needs of the railroad where the equipment is operated.



Box cars can be a part of the loading scene by adding a few men to work on industry sidings. A few barrels and crates will add still further detail to the busy industrial atmosphere.

Flat Car Loads

Flat car loads provide a greater variety than the visible loads of any other type of freight equipment. These loads include lumber, telephone poles, rail, steel beams, transformers, any type of boxed equipment, construction equipment such as bulldozers, carryalls, and steam shovels, and, more recently, military equipment such as tanks, halftracks, and trucks. The mere listing of loads for flat cars suggests possible materials for modeling the loads. Strip wood or scribed blocks of wood serve for lumber loads or loads of cross ties, and telephone poles can be easily made from ⅛" dowels for HO, 3/16" dowels for S gauge, and ¼" dowels for O gauge. Those short pieces of rail that cause so much trouble on a model railroad are probably just the right size for a flat car load, for remember that prototype rail is usually 33 feet long.

Unless you are able to witness prototype operations every day, it will probably surprise you that there are so many crated loads on every freight train. Some times these loads carry the advertisement of the manufacturer, so that their contents can be determined. At other times the load can only be guessed at, which is, of course, quite an advantage for model railroading. We can suppose it is one article heading in one direction, and on the return trip it can be an entirely different thing. These boxes can be made from balsa sheet or from solid blocks of wood. The bracing will depend on the size and shape of the crates. On many loads there are several crates on a single flat car.

Special loads for flat cars include the transformers, which sometimes are loaded on the depressed-center flat car, spe-

cial type of machinery such as diesel engine generating sets, large trucks, and army tanks such as those put out by Authenticast. Stewart also manufactures a line of flat car loads for those who want to purchase special equipment. The steel beams or girders can be prepared from the wood shapes sold by several manufacturers.

Gondola Loads

The most obvious gondola loads are sand, gravel, crushed stone and coal. In HO gauge, I have found that any sand which will pass through the openings of the average house screen will scale to approximately correct size. I have painted this sand to look like gravel and coal. These are illustrated in some of the accompanying photographs. The paint can be applied to the load after construction, or the sand can be placed in a small container of thinned paint and then turned out to dry on a newspaper.

The pipe shown on the CB&Q gondola was made from soda straws and painted black. This load is removable for it was constructed on a piece of corrugated paper and lifts out readily. Soda straws are useful since they come in different sizes and provide pipe for cross-country natural gas lines, for smaller sizes for industrial uses, on down to ordinary soil pipe.

Another good gondola load is scrap metal. Just be sure all your scrap is securely in the car and doesn't fall out to cause electrical shorts or other catastrophes. Parts of automobiles and other small scrap parts, such as pieces of screen painted rust color, small pieces of wire, etc. make up the average scrap load. I wouldn't advise steel wool, for it will certainly get into the permanent magnet motors and cause serious trouble.

Hopper Loads

Hopper loads are more limited in variety than the loads of either gondolas or flat cars. Coal, stone, sand, special types of clay or shale are about the only loads that can be modeled. About the only variations in the coal loads are the different sizes of coal. These can be made by using coal itself, crushed and sifted through house screening, or by painting sand which has been screened to the right size. In the case of hoppers, it is usually wise to have removable loads, for it is a little silly to see a cut of loaded coal hoppers being shifted under a mine tipple to be loaded again.

Covered hoppers are like closed box cars and reefers. We can assume that they are loaded or empty depending on the way bills. It is nice to have a few around for variety, however.

Boxcars

Although box car loads are normally not visible, an air of activity can be imparted at various points on the layout by having loading or unloading gangs at work on industrial sidings. Here the doors of the cars can be opened so that the operation of lift trucks, hand trucks, and other loading machinery can be observed. The cars can be placed at the ends of the sidings so that switching moves are not hampered by the permanently placed cars. There is always an extra car, or side of a car, and there are usually a pair of trucks that give derailment troubles, so no actual operating equipment needs to be sacrificed for scenic purposes.

If space is available on the team tracks of the layout, considerable loading and unloading activity can be modeled. On team tracks, trucks can be backed up directly to the open doors of the cars. A few scrap pieces of wood, scribed and painted will serve as packing crates, both in the box cars and in the trucks. A load of lumber, frequently shipped in box cars, is easy to model. Half the load can be modeled in the truck or stacked on the ground with the balance visible through the open doors of the box car.

A few wood dowels, painted black, are all that is needed to load up this fifty foot flat car.

A wood shape, painted with reefer orange, makes an effective steel beam, a heavy load.

A strip of roofing material formed this load although screened sand or coal could be used.

Balsa wood and model cement are the only materials required to make this imposing crate.

As in the case of box cars, the reefer loads are not visible while the train is in motion. The proper effect can be secured, however, if some of the reefer hatches are left open to indicate no load, while the closed hatches imply that the car is loaded with revenue producing perishables.

A more ambitious project for showing reefer loads is the construction of an icing platform. Such a project is beyond the scope of this article, but the actual work is not too difficult since it is all wood construction and the braces and platform are simple in design. There is now a kit available in HO Gauge which will help you model this detail.

Ute Short Line • Tincup & Hiccup

Diversified operation, by timetable, is the keynote of this elaborate HO gauge model railroad; basically, the layout consists of two different loops, winding back and forth over one another.

by EARL COCHRAN

ORIGINALLY the Tincup and Hiccup Railroad was intended as an old time pike, a mountain line similar to the numerous old Railroads located in Colorado. There actually is a town called Tincup in Colorado. The name Hiccup seemed to go so well with Tincup that it was decided to combine the two, using, as an excuse, a gold mine called Hiccup mine as the end of the line.

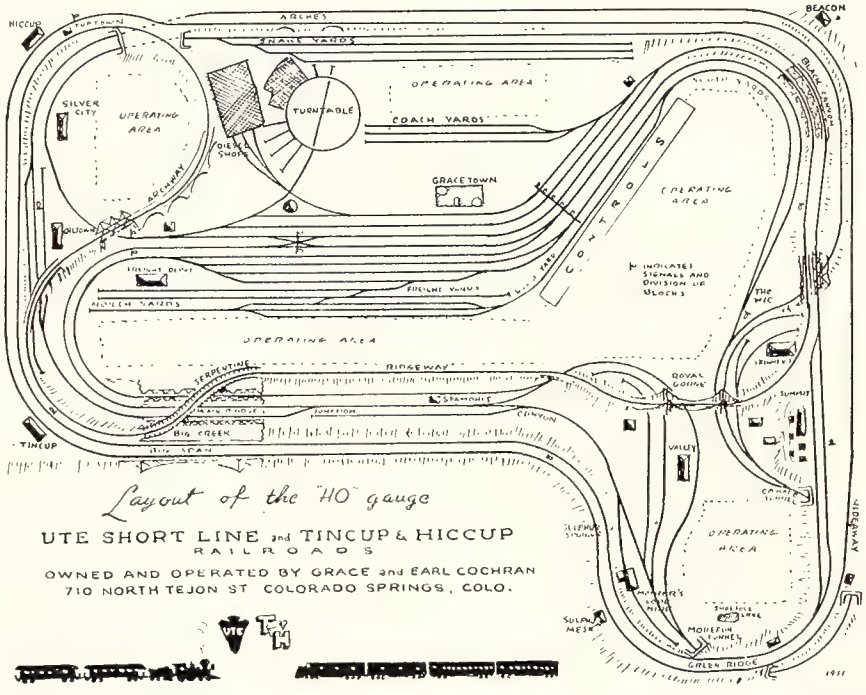
Before any right-of-way was laid, a few box cars were constructed for the T. & H. However, before construction could be started on this little mountain line, location plans were altered and the T. & H. was absorbed by the Ute Short Line. Even the U.S.L. had to move its tracks due to the brass hat moving to a new home.

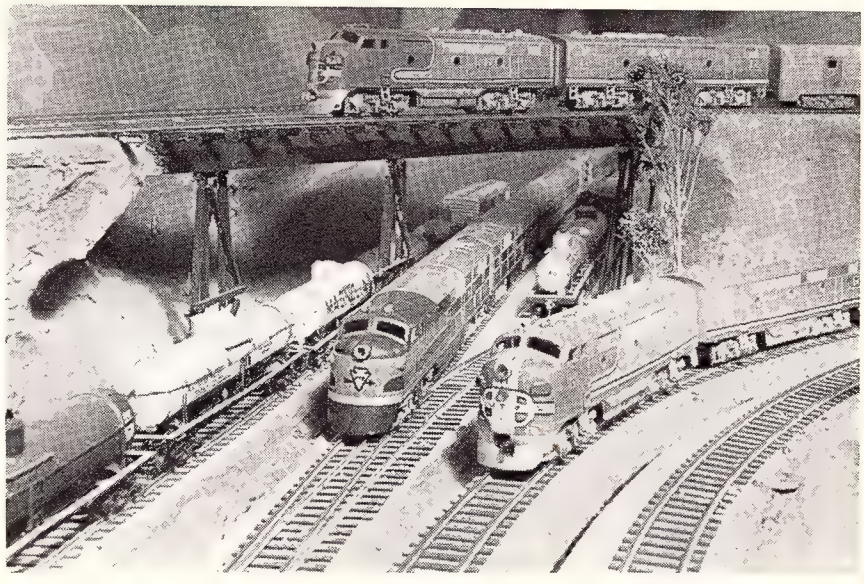
For sentimental reasons, the brass didn't want to dispose of the already constructed rolling stock of the T. & H. so it was decided that the two lines would be combined into one, but that both names would be retained, the Tincup and Hiccup becoming more or less a branch of the Ute Short Line which was devoted to modern power and rolling stock. You'll now find both the stations of Tincup and Hiccup on the main line and serviced by big articulated engines and streamlined diesels. Now and then the little T. & H. locomotive pulls a local between these points.

Upon moving to a new location, a space 18 x 24 feet was available for the combined layout, and construction work was immediately started after preliminary plans and drawings had been approved. It was necessary to make the plans on graph paper so that every curve and straightaway could be made exactly to specifications. All elevations had to be determined in advance. Each square of the graph represented one square foot of the layout.

It was decided that the simplest way to build the benchwork would be to construct open-top tables consisting of four legs, two side pieces, two end pieces and a center brace, but no top. The dimensions of these tables were to be two feet wide by four feet long, with the center brace dividing the top area into two, two foot squares. Instead of butting one table against another, a frame of the same dimensions as the table was made so the outside dimensions were 2 by 4 feet, with a center brace in between dividing the frame in half. This connects two tables.

Consulting the original layout graph, the position and number of tables needed was determined. Each table was to be spaced four feet away from the nearest table, and the frame was to be used to join them. The number of joining frames also had to be determined.





A view near Oiltown on the Ute Short Line. Three different streamlined trains, two Silver Arrows and the Yellow Arrow, are shown here, each on a different track.

The height of the tables, therefore, had to be no higher than the lowest part of the layout, except in one place where a river was to be built, and this was positioned so that one of the joining frames could be put in low position.

The tables and the joining frames were then constructed, 2 x 2s were used for the legs and 1 x 4s for the sides and ends. All pieces were put together with screws so that they could be taken apart if necessary. 1½ inch No. 8 screws were used throughout.

Twelve tables were needed, and when built they were placed in their proper positions in the room, corresponding to the positions that were marked out on the original graph. These were then joined together by the frames to make one complete base unit for the layout.

A view of the layout looking over the Royal Gorge Bridge. A sheet was hung in the background to keep from showing the rest of room. Notice the mural ends at this point; the mural was painted on a roll of 18" wall paper—total cost 20c. Photo taken by author from main operating area.

Sub-roadbed was then cut from 1 inch stock, 2 inches wide. The straight pieces were ripped out with a power saw and made in 4 foot lengths. The curved pieces were cut with a band saw, the curves for the main line being 30, 32 and 34 inch radius. Thirty inch radius was the minimum on the main line. Yard curves were 24 inch radius.

This sub-roadbed was then loosely laid out on the framework to determine if all curves were in their proper locations, and to determine the length of the straight pieces. When one roadbed crossed another, elevations were calculated, and grades made accordingly, checking again with the original graph to make certain everything was as it should be.

Pieces of 1 inch stock, 2 inches wide, and of various lengths were used to elevate the roadbed. The lower parts of these pieces were fastened to the frame, and the sub-roadbed screwed to the top edge.

However, before all these pieces were securely fastened, a "grade elevation guide" was made by using an 8 foot long straight-edge of perfectly straight wood with a two inch piece of wood fastened on one end. A spirit level was fastened to the top edge of this straight-edge. When the straight-edge was then level, the point from the lower end of the two inch block, to the lower edge of the other end of the straight-edge, indicated an approximate 2% grade. No grade was constructed steeper than 2%—2 inch rise in 100 inches.

When the sub-roadbed was laid, the regular ¼ inch roadbed was put down with ¾ inch No. 2 roundhead blue screws. The regular roadbed was positioned, as far as possible, so that it's joints and the joints of the sub-roadbed were not in the same place. This was done to eliminate sharp breaks in the roadbed where elevations started. In some cases small pieces of thin wood were used to make the roadbed level by inserting them between the sub and roadbed.

Tests were made to see that all the roadbed was as smooth as possible, and any curves that needed banking were banked by placing small wedge shaped pieces of wood between the two roadbeds. The tracks were then laid and divided into blocks suitable for cab control.

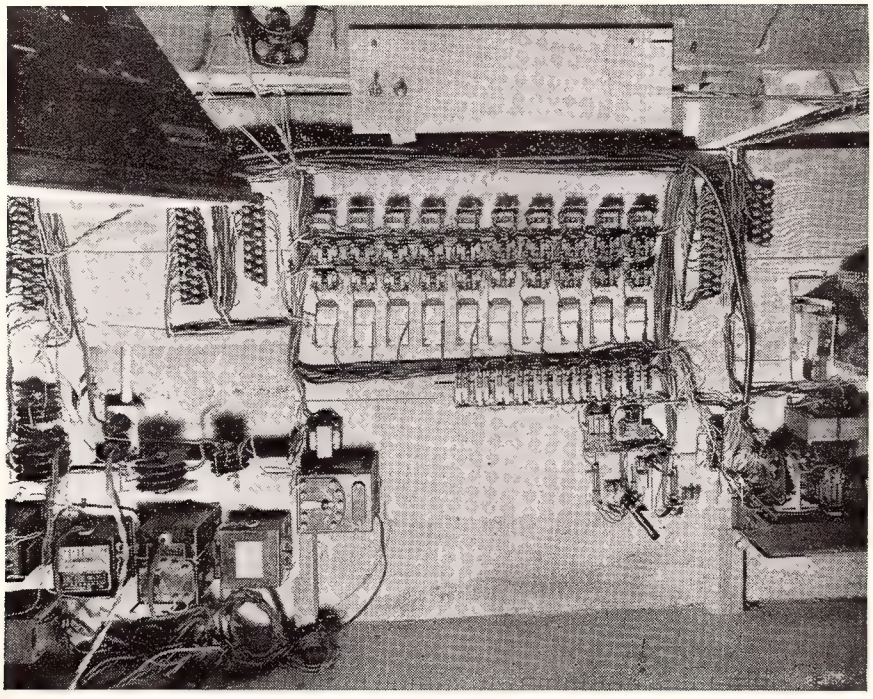
These tracks were tested by clipping the leads from a power-pack to the section being tested and a locomotive run over the rails. Any small flaws in track laying were then remedied.

A large panel was set up underneath the layout and near an electrical outlet. On it, all the relays, transformers and rectifiers were placed for easy accesibility.

Since the National Model Railroad Association signal system was to be used, it was necessary to have detection relays and a small rectifier for each block. Since dual cab control was to be used, either a double pole, double throw reversing switch was needed for each block, or a double pole double throw relay. It was decided to use the relay for easier operation. Therefore ten more relays were needed.

Terminal strips were placed on the board and labeled so that different connections could be made. Wire was run to all the ten blocks of the track, and checked again with the power pack.

The cabs were the next item needed, and were made from ¼ inch plywood. Triple pole, double throw switches were used on the panel to control each block as well as to furnish a separate circuit for the indicator lights on the panels. When a switch is thrown on No. 1 panel, a green light above the switch turns on as an indicator, and a red light above the corresponding switch on the No. 2



Nerve center of the Ute Short Line. Here are the relays controlling the reversing of the 10 different blocks and operating the signal system. At right is the "wipe" that rotates, flashing on and off the crossing lights. At left are transformers and rectifiers supplying 12 and 24 volts DC and 4½, 6 and 24 v. AC.

panel lights up. This was done to keep the two cab operators from turning on the same switch at the same time. If they did, they were presented with a "brownie." This indication system works either way for both cabs, but not for the freight cab.

Between the two cab controls, another panel was set up. On this panel a diagram of the layout was made, each block being represented by a different color. Toggle switches were installed to control the rotary solenoids that operated the numerous turnouts on the system. Also, an indicator light for each block was installed, which in turn was illuminated when the red light of the signal was activated for that block. This panel was called the dispatchers panel because anyone watching or operating it could tell the location of every main line train as well as tell the route to be followed. The position of the toggle switch handles indicated which way the train would go.

A separate cab and yard control panel was made for the freight yards. This cab was run off a separate power supply from the main cabs since it did not use the N.M.R.A. signal circuit. Some rather complicated wiring was done so that a train could be brought in on the freight yard throat by the main line cab, then could be taken over by the freight cab. One piece of track could be controlled by either cab, according to whether the turnout was thrown for the main line or for the freight siding. The turnout solenoid's extra points controlled which cab was connected to the track, according to the way the turnout was thrown. A yard limit sign indicated how far either cab could proceed on this special track.

The actual layout of this pike consists primarilly of two different loops, winding back and forth over one another. To cross from one loop to another, a double cross-over is used. It is only at this point that the change can be made. In this manner two different trains can be run without ever interfering with each other. Again, the train can run the complete layout if desired.

There are 13 parallel tracks in the main yards, two of which are on the main line, and three of which form the classification part of the hump yard. The hump yard is used to make up freight trains. One locomotive pushes cars up the hump, the cars are released and roll down the hill being switched to the proper classification track. Another switch engine gathers these cars and places them on a freight siding where a road locomotive picks them up.

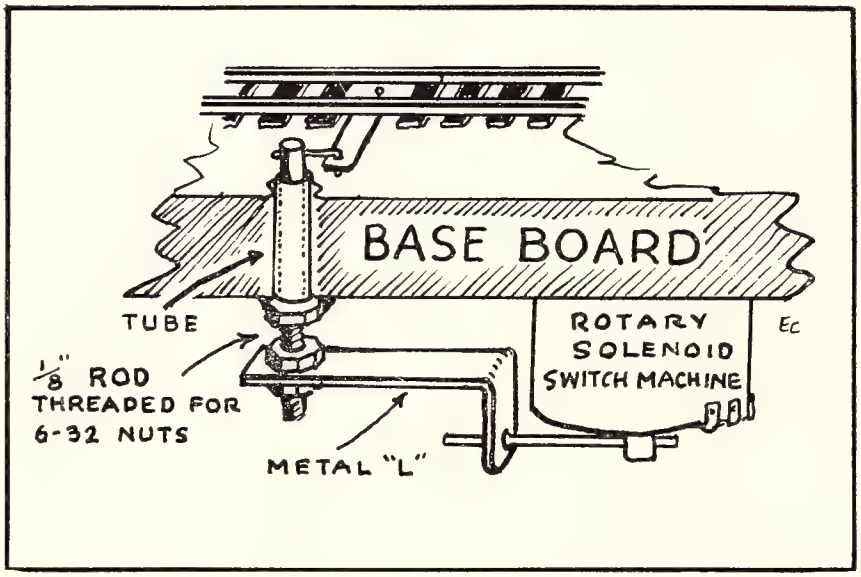
A diesel shop has been provided for the diesel locomotives and a turntable and roundhouse built. There are ten stalls around the turntable.

The turntable has been built so that the rails are only activated when the table is aligned with the track. This is done by relays. The turntable is operated by a motor and gear train for slow operation. This motor is controlled by a relay that is normally closed. The selector system consists of a set of points acting as a switch located on the floor of the turntable, one set for each stall, and a set of corresponding points on the freight yard control panel. To operate, the point on the control panel representing the stall is selected. This closes the switch on the control panel. Should the points on the floor of the turntable be closed by the wiper action of the contact point on the bottom of the turntable, then the circuit is complete, and the relay is activated disconnecting power from the motor. When this happens, the turntable does not move. If the selector switch on the control panel is moved to a different position, the circuit is broken, and the relay turns off, closing the contact switch for the motor, and the motor operates, turning the turntable. As soon as the turntable moves to the selected position, and the wiper on the bottom of the turntable completes the contact (closes the switch) on the turntable floor, the circuit is again completed and the relay activated, shutting off the motor. In this manner any position can be selected, and the turntable moved automatically to that position.

To keep the activating relay from being on all the time, a toggle switch on the control cab, a double pole double throw toggle, controls power to the relay. Only when this switch is on will the turntable operate. The other two poles of this toggle conduct electricity to the tracks of the turntable and stall through a series of 10 relays, one for each stall. Each of these 10 relays are activated through the selector circuit, and only allow current to pass to the selected stall and turntable when the turntable has reached that position.

One turnout on the main line, located at "Junction," was always in the wrong position for operation when manually controlled from the dispatcher's panel. It was decided to make this an automatic turnout.

To do this, it first had to be decided

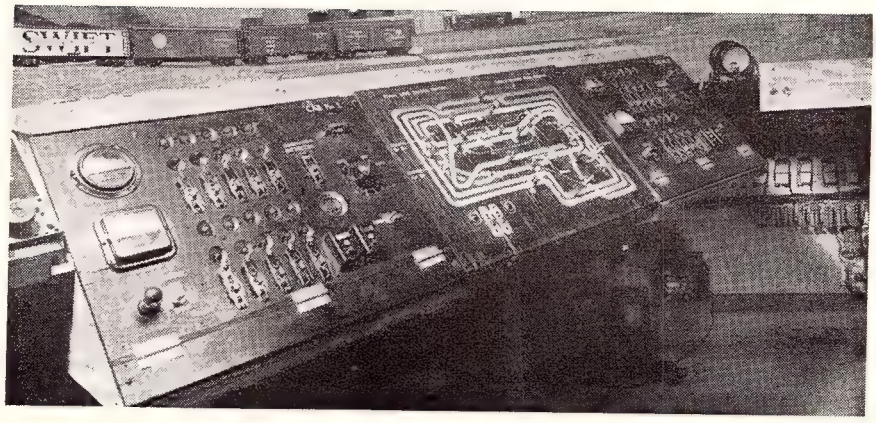


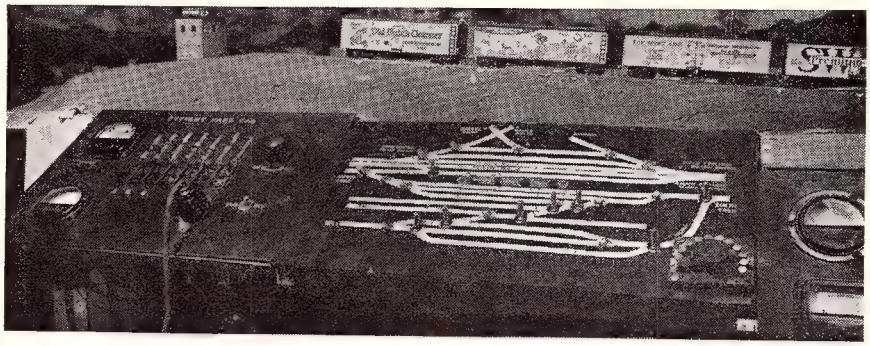
which track would be in line most of the time. This would be the position in which the rotary solenoid, which controlled the turnout, would be off. A rotary solenoid is an ideal device for a switch machine. It is operated by a toggle switch. When current is applied to the solenoid, it rotates and holds at that position. Two coils are used in the solenoid, one to activate the turning, which draws heavily on the electrical supply, but is only momentary, and a holding coil which draws very little amperage. When the current is disconnected, the solenoid returns to its original position by spring action within the solenoid itself.

The automatic control would then have to be placed on the track normally not open to the turnout. The controlling device was no more than a short piece of track about one-half inch long, insulated from the main rail. This was done by cutting the one rail at two places one-half inch apart, and securely spiking down the short section. A jumper wire was soldered to both parts of the main rail, leaving the short section independent. This control was spaced about two feet ahead of the turnout. Another insulated piece of the same type was made in the same rail further on in the track, the length of the longest train (and then an additional foot for safety) from the turnout. Again a jumper wire was soldered across the main rail.

A wire was soldered to the first insulated piece of rail ahead of the turnout, and in turn connected to one coil of a Casey Jones switch machine, which is really a double coil solenoid. Another wire was soldered to the other insulated piece of rail and connected to the other coil of the Casey Jones. A lead from each of the coils of the Casey Jones were spliced together and connected to a wire leading to one side of a 24 volt AC bell transformer. The other side of the transformer was connected to the main rail between the two insulated sections.

The transformer was activated by the 110 V circuit and a car run over the first insulated joint making a completed circuit through the contact of the wheels.

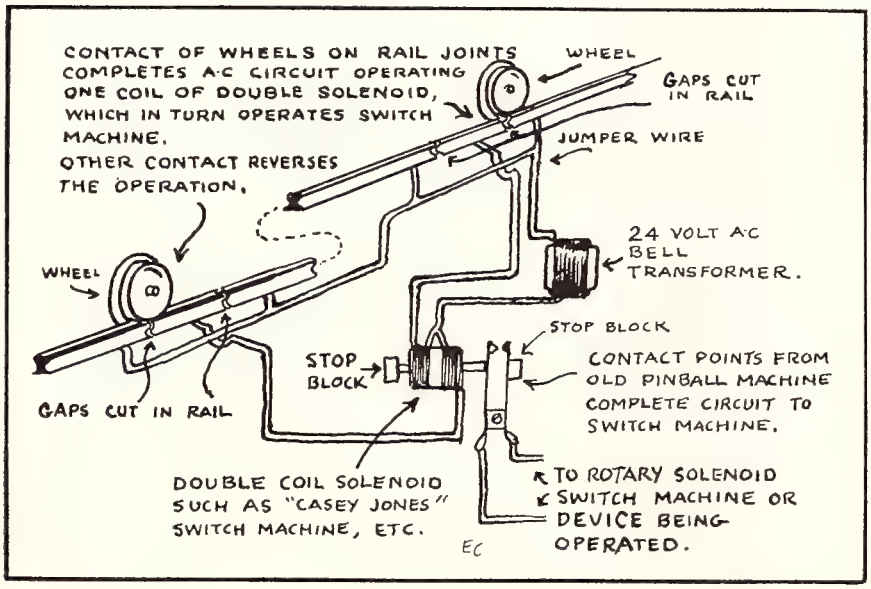




Top: Main line control panels with dispatcher's panel in center. Below: Freight yard cab to left and at right is panel for controlling all yard turnouts. The multi-contact switch (lower right) is the selector for turntable position.

Best results were obtained when the uninsulated wheels made this contact. This action operated one coil of the Casey Jones machine, and this was noted. Two spring contacts out of a pinball machine were mounted on a small board about ⅛" apart and placed in front of the Casey Jones so that the plunger would press the two spring contacts together. These contacts were then hooked in series with the switch solenoid controling the turnout and its source of current.

The action was now as follows: The car wheels made contact between the insulated section of rail and the main section of rail completing the 24 volt AC circuit and operating the Casey Jones machine. The plunger of the Casey Jones pushed the pin ball spring contacts together holding them there, completing the circuit to the rotary solenoid operating the turnout. The train now passes on through the turnout that has been thrown in line for proper operation, and travels to the next insulated piece of track. The train must clear the turnout before reaching this insulated section or a wreck will result. As soon as the wheels of the train close contact between the insulated and main section of rail, the second coil on the Casey Jones is activated, releasing the contact points controling the current flow to the rotary solenoid, and the switch is released. The turnout is now back to its normal position. The A-C current does not hinder the normal D-C operation.


CONTACT OF WHEELS ON RAIL JOINTS COMPLETES A-C CIRCUIT OPERATING ONE COIL OF DOUBLE SOLENOID, WHICH IN TURN OPERATES SWITCH MACHINE.
OTHER CONTACT REVERSES THE OPERATION.
WHEEL
GAPS CUT IN RAIL
JUMPER WIRE
24 VOLT A-C BELL TRANSFORMER.
WHEEL
STOP BLOCK
STOP BLOCK
CONTACT POINTS FROM OLD PINBALL MACHINE COMPLETE CIRCUIT TO SWITCH MACHINE.
GAPS CUT IN RAIL
DOUBLE COIL SOLENOID SUCH AS "CASEY JONES" SWITCH MACHINE, ETC.
TO ROTARY SOLENOID SWITCH MACHINE OR DEVICE BEING OPERATED.
EC

The above simple circuit can be used for all kinds of automatic controls as long as a train does not stop on one of the rail contact points. Should this happen, current will flow through the Casey Jones, which is only designed for instantaneous contact, and burn out the coil.

The road crossing lights on the Ute Short Line are controlled or activated by the above type circuit. One contact is arranged to turn on the lights, the other to turn them off. However, most crossing lights flash, so that meant another device was necessary.

At the beginning of construction of this railroad, a pinball machine had been purchased from a vending company for a few dollars, an obsolete model that was not being used anymore but had plenty of parts. From this machine a "wiper" was extracted. This wiper consisted of a small 50 volt motor which

Way Bills, Car Orders, Timetables, Passes and Tickets are all a credit to the building of this elaborate HO model railroad. All this material is authentically prepared and gives evidence of the brass hat's wonderful sense of humor. Trains actually follow the timetable schedule.

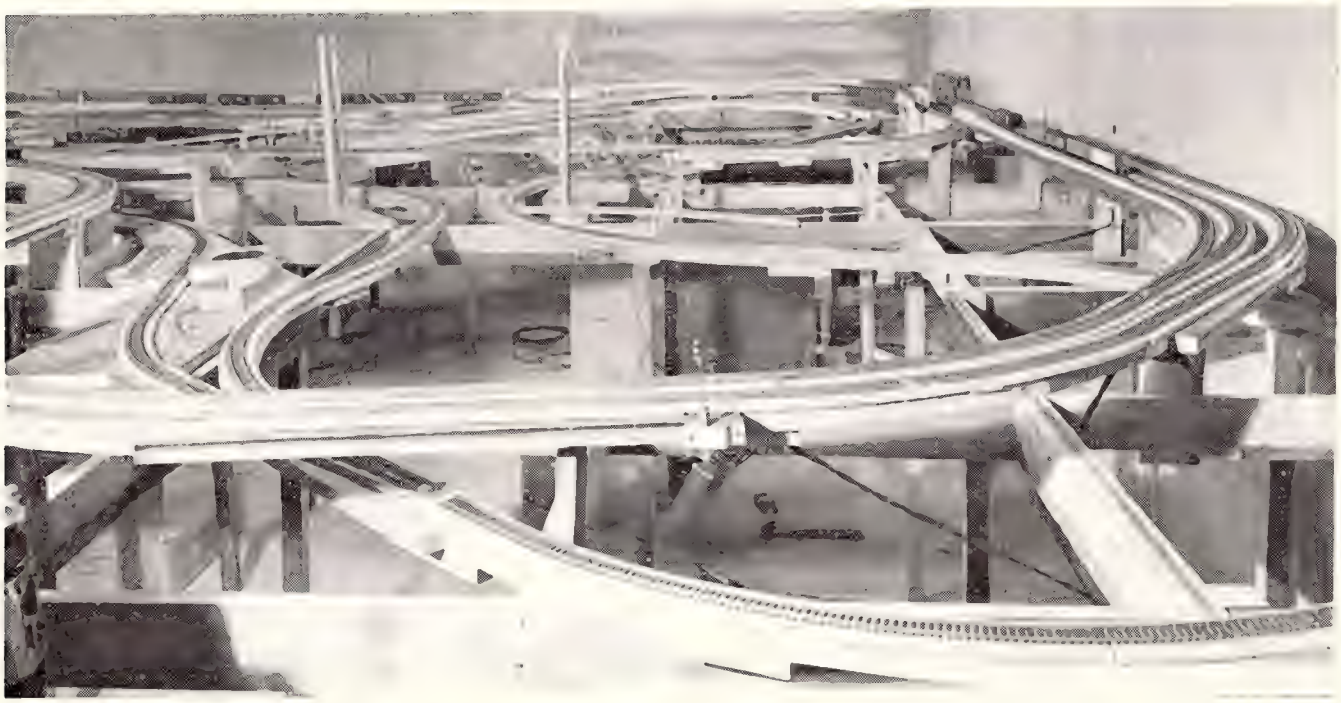
operated a number of brass fingers over a disc filled with contact points.

Every other contact point was soldered together, and then the inbetween contacts were then connected. When the motor was turned on, the fingers revolved over these alternate points, and when the two circuits of points were connected in series with the crossing lights and connected to a 6 volt source of supply, since 6 volt bulbs were used, the lights would alternately flash on and off. All that was needed for the automatic control was to make two insulated points in the rail as was done for the automatic turnout, and connect the motor of the "wiper" through the points of another Casey Jones machine and to a 50 Volt AC supply and the crossing lights worked automatically.

Scale time operation is practiced on the Ute Short Line. This is done by operating against a clock that travels ten times faster than normal. By actually running trains against the scale clock, a timetable was devised. Printed copies of this were made and are given to each operator. The engineer operating the passenger trains must stick to this schedule as closely as possible, and the freight engineer usually has to hit a siding before the passenger arrives. Of course, the dispatcher has control over all the trains and issues orders accordingly.

Visitors are always welcomed at this pike, and since Colorado Springs is quite a tourist resort, many out-of-state visitors drop by while on their vacation. Friday nights have been set aside as operation nights, and the scale time operations are carried out.

Realizing that all railroad modelers will not be able to see the Ute Short Line and Tincup and Hiccup Railroad, the brass hats thought that this article might give you an insight into the line and its operations, allowing you the next thing to a personal visit.



Framework for the Ute Short Line, taken from "Green Ridge," looking towards the South Yards. Operation area, with control panels, is just behind the "Royal Gorge" bridge. This type of framework construction is very strong, permits ready access to troubled areas and is realatively easy to scenic.

INSTALLATION and OPERATION:

the ELECTRA SWITCH MACHINE... by JOHN KEMP

Some ideas to adapt and install switch machines to give more positive performance.

THE switch motors on my latest pike were installed after the culmination of a good many years experience with both electric and manual switch controls, and have given good service for six months with every possibility of continuing. Nearly all of my machines are the popular "Electra" make which give very good service if installed and operated as follows.

First of all, I try to do several switches at a time and so save minutes by assembly line work. I take all switch machines out of their boxes, taking care that the little special machine screw does not roll down to the floor. I place the sliding bars, armatures and screws in a pile and perform certain operations on the heavy cast frames of the machines. The screw holes at the ends are not all the way through, so these must be drilled. This lead base material is very hard to drill by hand and I saved considerable time by using a drillpress. I also drilled a "new" hole in the center, the location and purpose of which is described further on. (If you have a handy-grinder, you can drill up into these holes from the bottom with a dental burr, then open it out with a larger drill without too much trouble).

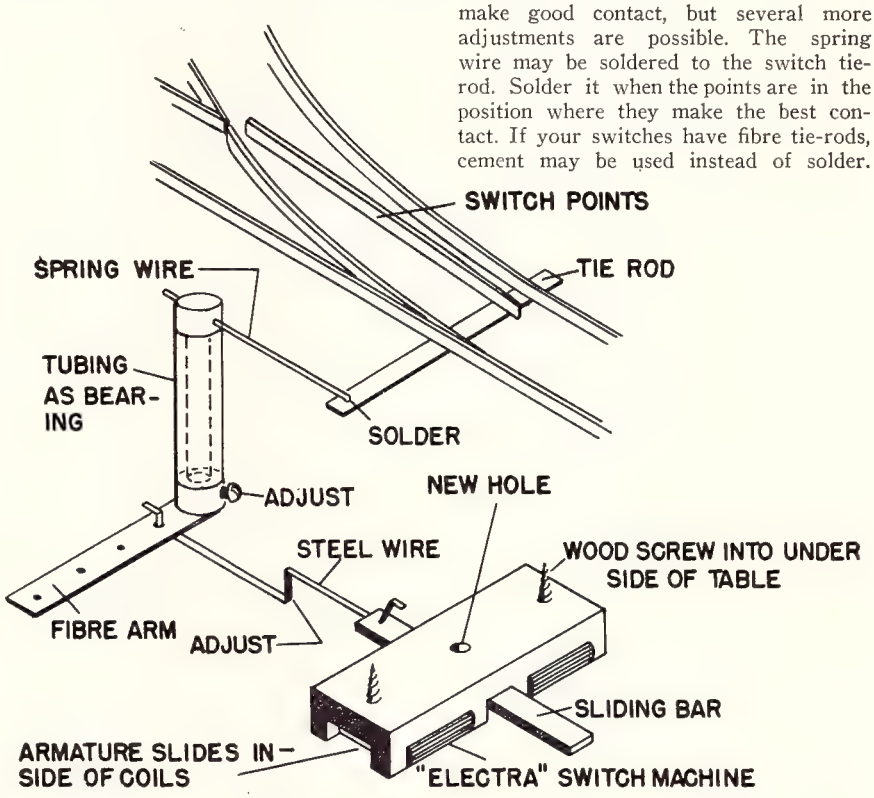
I drilled holes about 1/16" in diameter, ⅛" in from each end of the sliding bar, using my handy-grinder. Then I assembled the machines as per directions. In inserting the special screw into the tapped hole in the sliding bar (it rides in a slot in the armature and actuates the bar), I turned it up as tight as possible. Then, because of previous sad experience, I used the "new" hole to reach through with a center punch and mutilate the lower end of the screw so that it would not back itself out of the hole and become lost. Cement could be used to the same end, or possibly solder, sweating it in via the sliding bar.

When possible, I install the machines above the tablework for all that is needed then is a little spring attachment and a direct connection between the sliding bar and the switch tie-rod. However, such above-ground locations are rare and the usual thing for me (and most others) is to mount the switch motors under the table. A variation of the direct connection is possible with underneath mounting, but sometimes cross-braces or other switch machines interfere. So, I have adopted the Windsor Tandem Switchpoint Transmission as standard. It gives good action to the points, enables you to mount the switch machine almost anywhere under the table and, because the points make good contact, does away with the need for any extra wiring to carry current around the switches. This Windsor transmission is essentially a crank, turning in a brass bushing forced into the table. The lower end is a fibre bar which can be adjusted in position with a set-screw. The upper end is a piece of spring steel wire, which utilizes the excess of switch machine throw over point throw, to spring the points solidly against the stock rails of the switch: hence, good contact.

A piece of steel wire is bent to the approximate shape drawn and soldered to the sliding bar of the switch motor. Meanwhile, the Windsor transmission is installed per instructions. I slip the fibre arm onto the end of the steel wire (which, by the way, came from discarded choke controls!) and slip the arm onto the bottom of the transmission rod, tightening the set screw with my fingers only to keep it from dropping off since most work now is overhead, under the tablework. Now the switch motor is located anywhere under my table, limited only by the length of the steel wire. To mount the motor, I line up the sliding bar at right angles to the fibre arm (as nearly as possible), and use an awl thrust up into the table to hold one side in place while I insert a screw at the other end. Next I remove awl and screw up the other end. Now it is advantageous to test the switch machine.

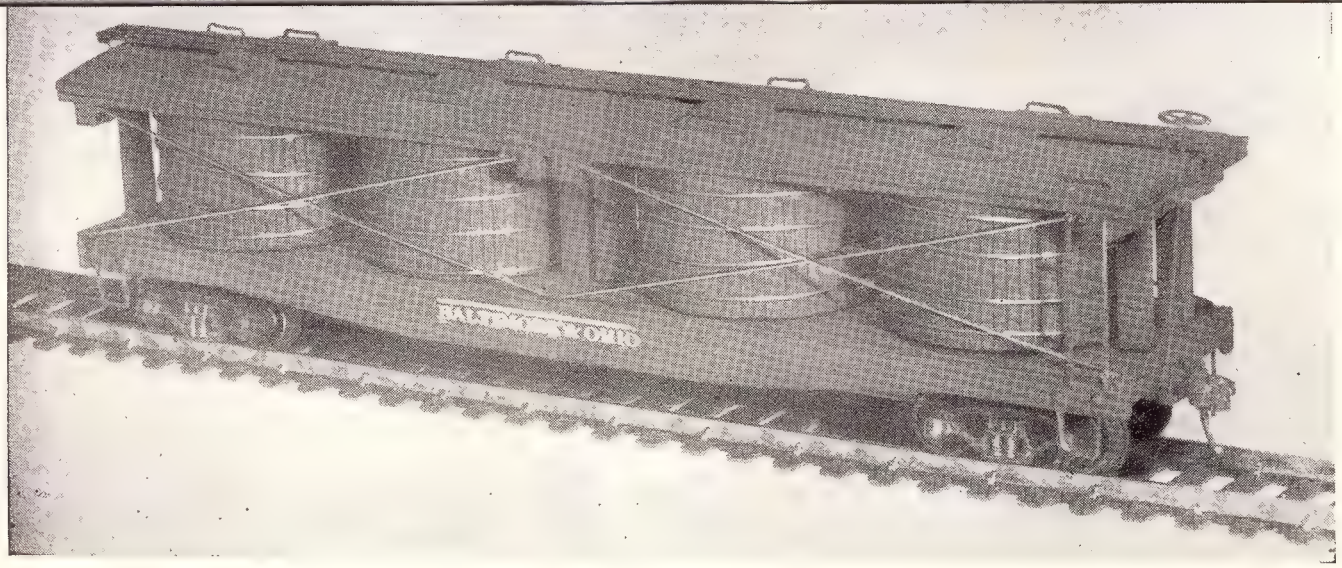
It is helpful to pencil on the bottom of the table, near the transmission, directions which will give straight and curved paths through the switch, using just the letters S and C. Then I notice which way the sliding bar of the switch machine would throw the points and spike them over in that position. The set-screw can then be tightened on the fibre arm (medium tight), remove spikes that hold the points, and try the switch machine out. The points should throw over in the right direction now, but probably will not make good contact with the stock rails. For a final adjustment, hold the top spring wire (that attaches to the switch tie rod) and force the fibre arm to give a little more throw in the required direction. When this is achieved—it takes trial and error—tighten the set-screw as much as possible.

It may be that even now the switch may not throw completely, or may not make good contact, but several more adjustments are possible. The spring wire may be soldered to the switch tie-rod. Solder it when the points are in the position where they make the best contact. If your switches have fibre tie-rods, cement may be used instead of solder.



A fourth hole may be punched or drilled in the inner part of the fibre arm (I show the steel wire in such a hole in my drawing) to give more throw at the top from the limited throw underneath.

Two switches may be operated from one switch machine using these Windsor transmissions. The second switch can work from the fibre arm of the first one, or, in the case of a crossover, the work can be done by the unused end of the sliding bar. In this case, since the switch machine will already be located by the above methods for the first switch, you will have to splice the second steel wire. Tin both ends before mounting, then solder together when adjusted.



The author's "Pickle" car as built by the method outlined below. With exception of trucks and couplers, car was constructed from scraps.

PICKLE CAR

When placed in a train of standard box cars and hoppers, this pickle car is sure to attract more than its share of interest from visiting firemen. Very colorful.

by BILL MILLER

OBSOLETE or rare cars always create the most interest on model pikes, regardless of gauge and Pickle Car falls into this later category. The I & G Railroad, an extensive HO pike, recently added this unique car to its ever increasing list of odd rolling stock. It seems that the home-built cars are the ones that cause the most comments from friends; on the basis of their interest, I felt that the plans for a Pickle Car should be passed on to fellow model rails. This car should be a "must" for all fanciers of the unusual; prototype is the old H. J. Heinz Pickle Car.

To facilitate following the plans, all the details and assembly views have been drawn to HO scale and the number required for each part has been noted in parenthesis opposite the part name.

Construction of my model started by making the floor from 3/32" thick wood sheet; cut the piece 4 15/16 x 1¼" making certain that the sides and ends are square. The sides are cut from 1/32" thick wood sheet to the size and shape shown on the drawing. This shape is commonly identified as "fishbelly." Place one side against the other to make sure that both are identical; trim or sandpaper to even up sides, making both exactly the same.

The center sill and body bolsters are made from ⅛" x ¼" wood strip; the length of the sill is 3 9/32" and the size and shape of the bolsters are shown on the drawing. Make the end sills from 1/32" thick wood sheet. In my model, a space equal to the width of a Model Die Casting Company's draft gear was allowed in the notched out portion. This space may be adjusted to suit the couplers of your choice. Poling pockets are made from 1/32" thick wood sheet.

Place the floor topside down on a flat surface and cement sides, end sills, poling pockets, center sill and body bolsters to the floor. Add airbrake cylinder. Paint the bottom of the car black and the top, sides and ends, tuscan or box-car red.

The tubs or vats, four in all, can be made from anything cylindrical as long as the diameter is at least 15/16". I used an old broomstick handle although a mailing tube, card stock, etc. could also be used. To simulate the boards of the tubs, I used 1/32" thick commercially scribed wood, carefully wrapped around the "tubs." If you can't get the scribed wood, use Bristol board and before applying it, scribe vertically 1/16" apart. Regardless of material, cement it on and hold it in place with a couple of rubber bands until dry. Paint the tubs coach green. Don't bother painting the tops or bottoms since they will be cemented to the roof and floor.

The vertical columns and the horizontal beams are made from ⅛" square wood strips. Refer to the assembly views to get the location of the columns and beams and cement the columns to the car floor and the beams to the tops of columns. Make certain the columns are vertical to the floor and that the beams are properly centered. Paint the columns and beams the same color as rest of car. car.

The bracing rods are made from #24 wire. Drill #76 holes in the beams and floor in locations shown on drawing. The bracing rods are located diagonally on each side of the car. Bend and then push rods into place. By now the tubs should be dry. Wrap lengths of #30 wire around the tubs and twist the ends to hold them taut. You will note on the assembly drawing that the wires are closer together as they go down to the bottom. This is necessary because the pressure of the liquid is greater at the bottom. Cement the tubs to the floor.

Make the sub root from 1/32" thick wood sheet. Paint bottom side of the sub roof the same color as the rest of car and cement to top of tubs and beams, making certain that it is centered. Cut a ridge pole 3/32 x 3/32 x 4 15/16" from wood strip and cement it to the top along the center of the sub roof.

The roof is made of 1/32" thick wood sheet and is formed in the same manner as the roof that was made for the MKT caboose described by Lew Austin in the July '50 issue of Railroad Model Craftsman. For those who don't have a copy on file, it was done by steaming the roof and bending it to shape and then taping it around a two inch diameter pipe until dry. You can use your steam pipes in your basement.

Cement the roof on top of the sub roof and ridge pole and hold in position with rubber bands. Cut out the two roof ends (1/32" thick wood sheet) to the size and shape shown on the drawing. These are cemented under the roof to fill in the open ends. Make the roof walk from 1/32" thick wood sheet and scribe two lines to represent boards; roof walk supports are made from 1/32" square wood strips. Cement these to the top of the roof and add roof walk.

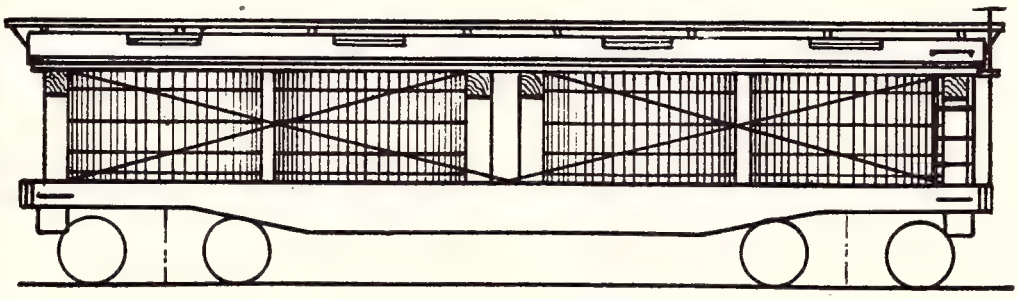
Hatch covers are made of 1/32" thick wood sheet, cemented on each side of the roof walk over the tubs. Add ladders to each side of the car, four in all, two on each side. On the model illustrated, I have only shown one ladder per side; this was done so as not to block out the beam and column construction. Add steps, grabirons and platform which is made from 1/32" thick wood sheet. Add brakewheel and staff.

Paint the roof the same color as the rest of car and touch up other parts if necessary. Add decals or hand letter. Now, with trucks and couplers, your car is ready to roll.

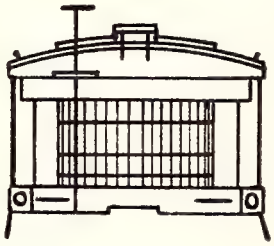
Bill Of Materials

3 x 10 x 1/32" sheet white pine
⅛ x ⅛ x 12" strip white pine
1¼ x 5 x 3/32" strip white pine
¼ x 7 x ⅛" strip white pine
1/32 x 1/32 x 3" strip white pine
1 brake wheel 10 staples
50" #30 wire; 24" #24 wire
8" ladder stock
Pair trucks, couplers

PICKLE CAR



SIDE VIEW



END VIEW

SUB ROOF (1)

SIDE (2)

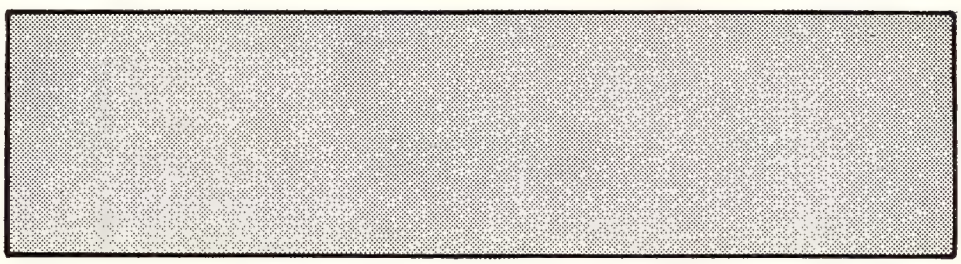
FULL SIZE-HO GAUGE

END SILL (2)

ROOF END (2)

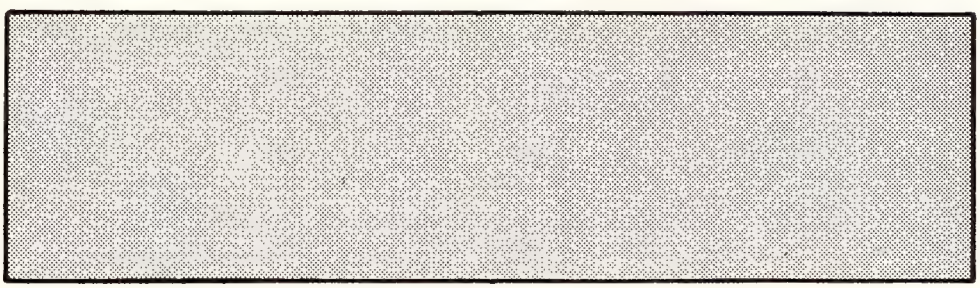
BEAMS (4)

COLUMN (8)



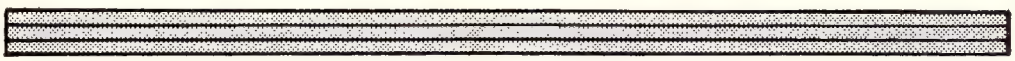
FLOOR (1)

TUB (4)



ROOF (1)

BODY BOLSTER (2)



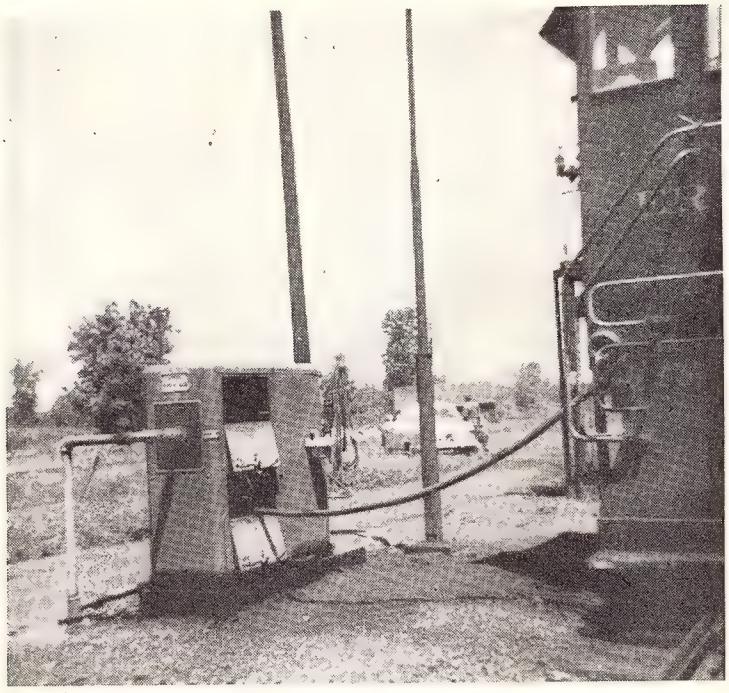
ROOF WALK (1)

COVER (8)

BILL MILLER

DIESEL SERVICING

A most important operation usually overlooked on a miniature railroad. The facilities shown here are used throughout the country and lend themselves well to modeling. They can easily be built from common scrap materials.



A Bowser Unit, known as "Serv-A-Train," fueling an Erie diesel road switcher.

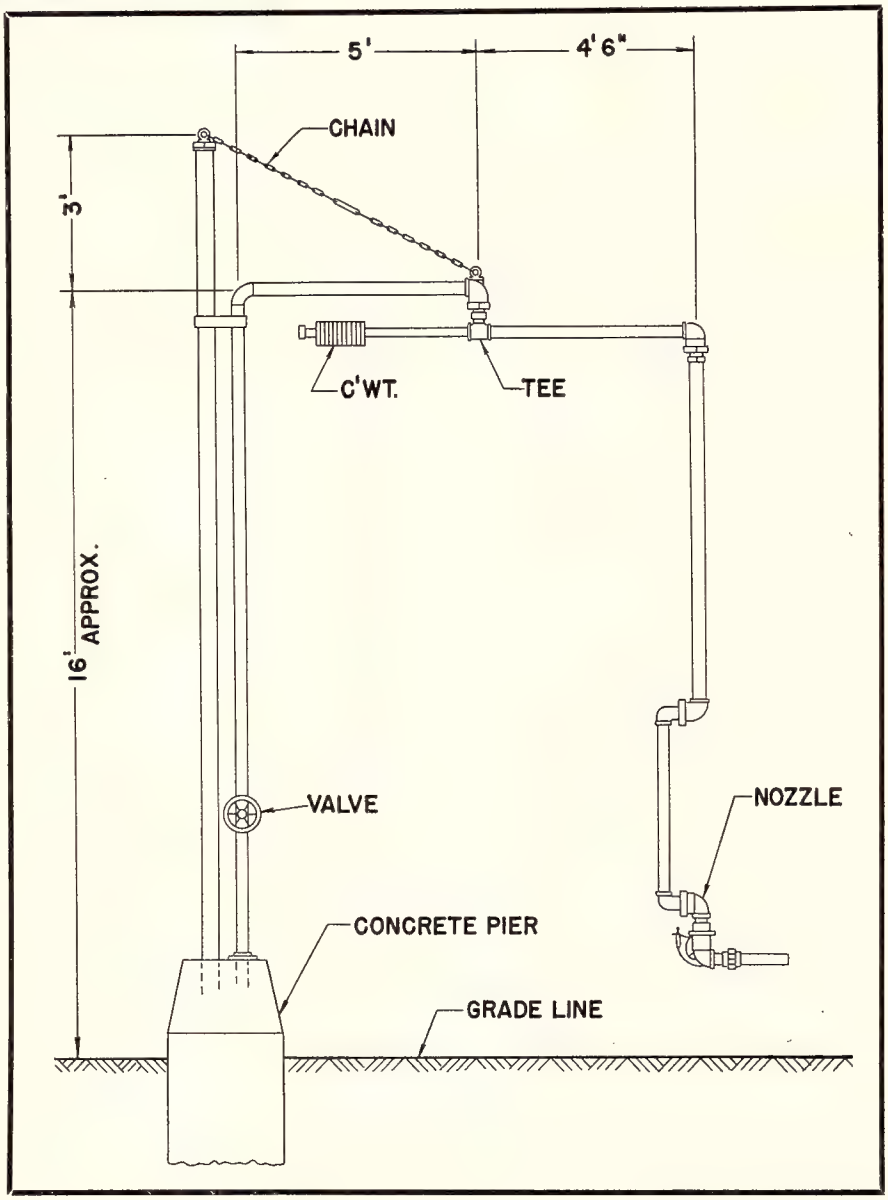
TO satisfy its physical needs, the prototype steam locomotive requires elaborate coaling facilities, water stations, ash pits, etc. and most of these installations are usually duplicated on the average model pike. Many model railroads, however, fail to provide fueling facilities for the common diesel locomotive. Remember, diesels have to eat too!

Away from terminal areas, diesel locomotives are fueled direct from tank cars and by trucks similar to those that service gasoline stations. More permanent installations, however, are now provided in all large yards and terminal areas of diesel-using railroads. These installations are most adaptable and flexible; they are easily handled by one man and a locomotive does not have to be as carefully spotted as with steam equipment. These facilities can be readily duplicated in miniature from scrap materials. They should be located in the terminal area in such a position to service two tracks, spaced twenty feet apart, center to center.

In the prototype, several types of fueling installations are available commercially, the two most common types are shown here. Both draw the fuel from underground storage tanks.

The Barco Unit

The *Barco* unit, manufactured by the Barco Mfg. Co. of Chicago, features a 2½" pipe, supported (by a riser mounted in concrete) in such a way as to permit a 360 degree turn, a complete circle of movement. It is fitted with a counterweight so that little effort is required to use. Flexible Ball Joints permit the pipe to be moved around at will, to service at various levels and at two tracks.



Diesel servicing and steam engine maintenance as carried on at the Argentine roundhouse of the Santa Fe Railway. Note the work pit in foreground. Photo courtesy of AT&SF Ry.

Most of these installations are fitted with lights for twenty-four hour a day service. In larger yards, three and four of these units are set in a row, spaced to the length of a diesel unit; they form a battery to service several diesel units simultaneously.

The Famed Serv-A-Train

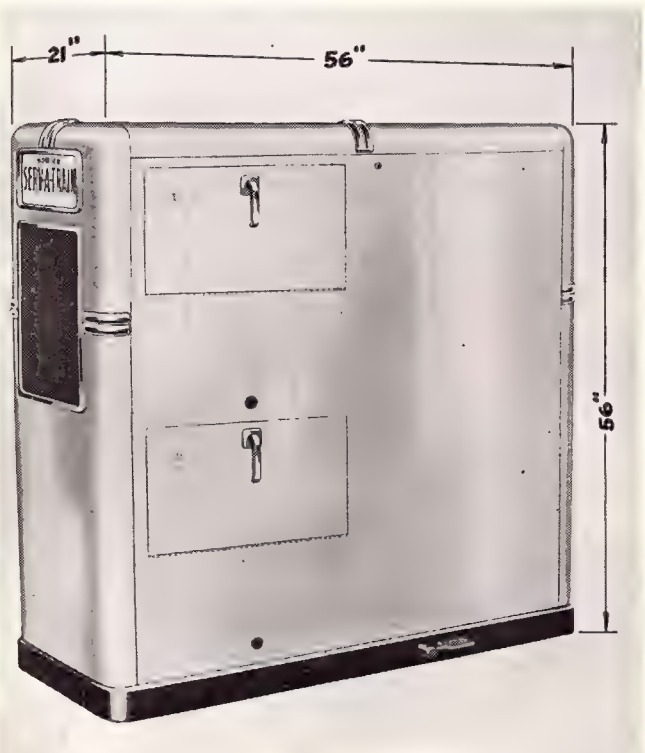
Another type unit is manufactured by Bowser, Inc. of Fort Wayne, Indiana. Their device, known as "Serv-a-Train" is a compact unit with the back completely closed, a flat surface, and with all openings in the front. All the equipment is self contained (power pump, motor, meter, fuel filter, hose reel, etc.) In a cabinet only 56 x 56 x 21" wide. The cabinet itself is of steel with a channel Iron frame; finished in a brilliant red with a toe board painted black. All trim is of stainless steel.

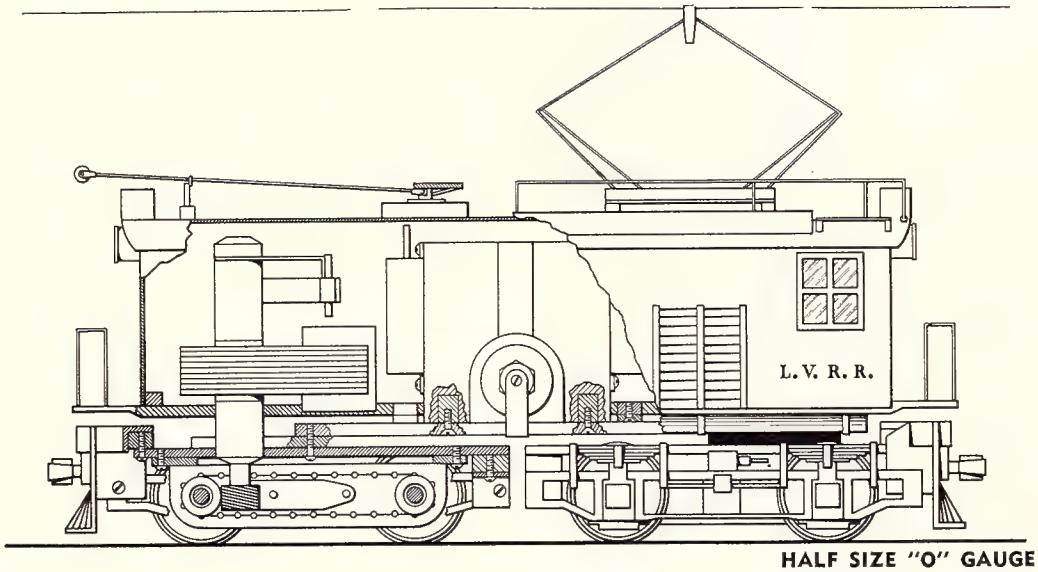
There are several sizes of "Serv-a-Train" available, the one illustrated is especially designed to efficiently dispense fuel or lubricating oil to diesel switchers, commuter locomotives and other equipment where it is not necessary or desirable that a larger fueling system be used. Being self-contained, they provide maximum simplicity in installation and a high degree of convenience and ease of operation. Sizes are available for delivering up to fifty gallons of fuel per minute or twelve gallons of lubricating oils.

"Serv-a-Train" models can be made from a block of balsa, and painted similar to the prototype. For most realistic effect, the doors can be left open with a thread or wire "hose" sticking out. Splotches of black paint in the immediate area will give a final touch of realism.

A battery of Barco Diesel fueling units. The assemblies can be swung to service two tracks; fuel storage tanks are below ground, filled from tank cars.

This device can be made from pine stock, scaled to the dimensions shown. The prototype unit is finished in red with a black toeboard with trim of silver.





HALF SIZE "O" GAUGE

Power Mechanism for B, A & P Engine

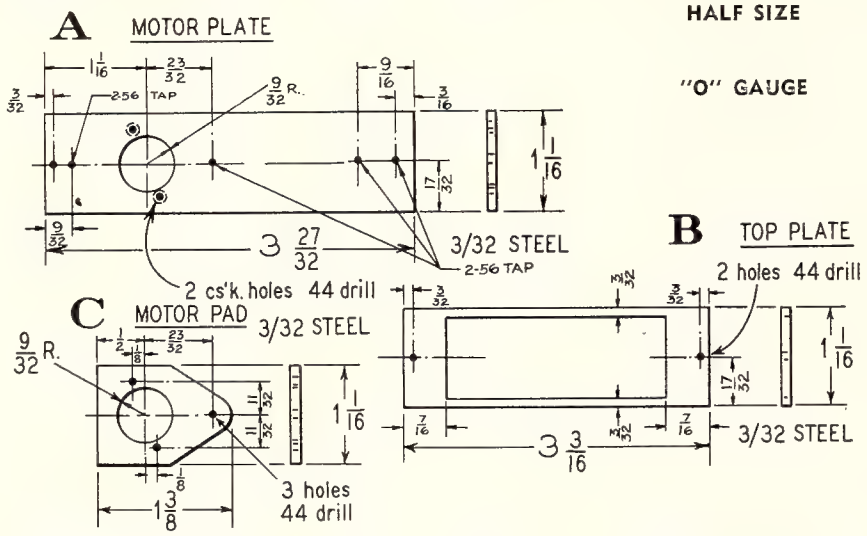
A DRIVE MECHANISM DESIGNED FOR VERSATILITY, POWER AND EASY INSTALLATION. AN ENCLOSED TYPE DRIVE WHICH CARRIES LOCO WEIGHT ON CONSTANTLY LUBRICATED BEARINGS. TWO K&D No. 1 MOTORS SUPPLY THE POWER THROUGH 20 TO 1 WORM GEARS.

PART ONE by LONG VALLEY ELECTRIC RY.

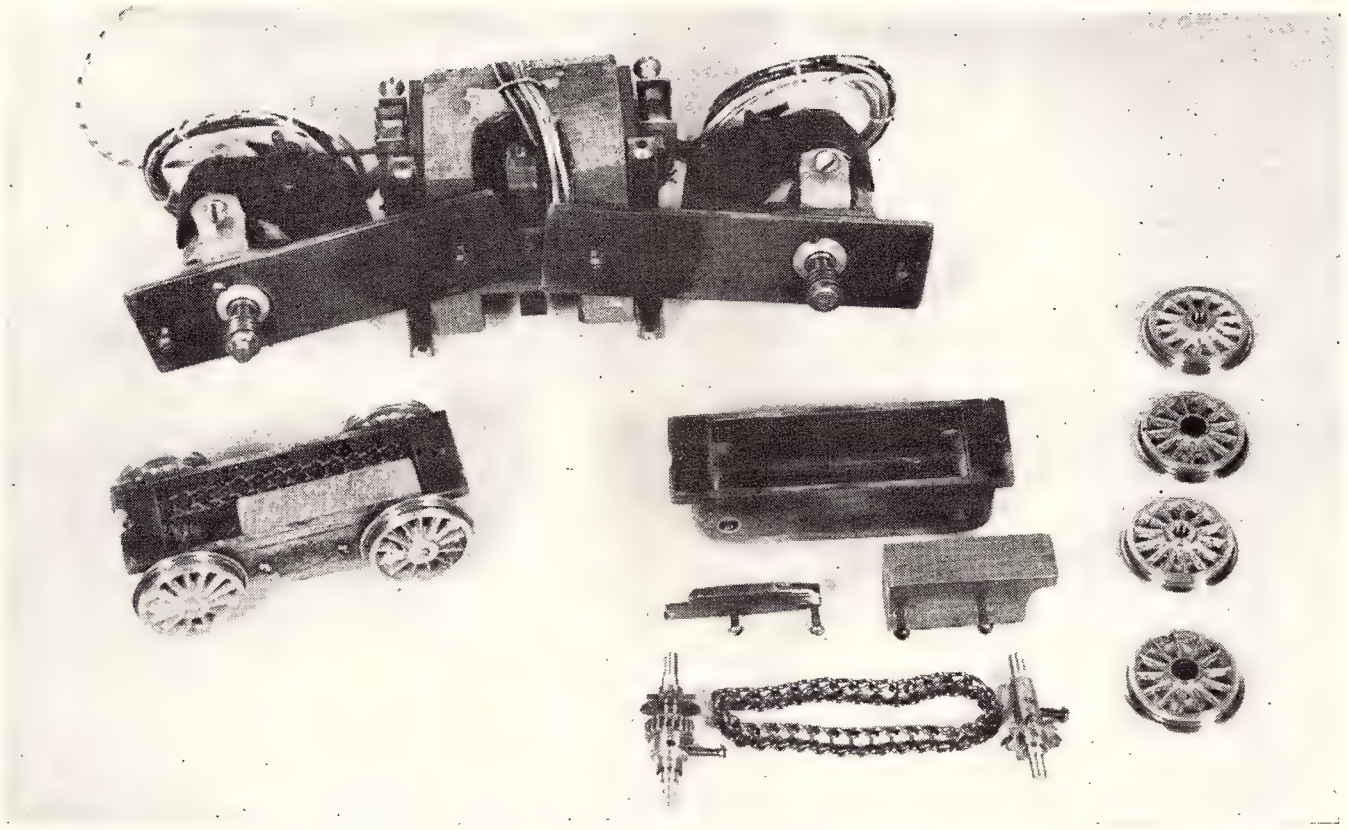
THE Butte, Anaconda & Pacific electric locomotive described by Lewis Austin in his construction article starting with the April, 1948 Model Craftsman attracted considerable interest in the Long Valley offices and caused speculation on how the engine might be adapted to the needs of this road. A check on the prototype specifications showed that rather than being just a switcher, this compact freight motor was built for over-the-road service and has considerable ability. An 80 ton, 2400 volt machine, it develops 1200 horsepower right down at the wheels where horsepower really counts. Tentative plans were accordingly drawn up for a twin motor drive mechanism to take advantage of all weight that could be concentrated on the wheels since it was felt that a model of this B,A&P engine should have pulling ability proportional to its 80 ton big brother. It is the Long Valley's opinion that heavy duty double truck O gauge locomotives can never have maximum performance when only one truck is powered since a good deal of the chassis load becomes dead weight and drag on the idle truck. Any ballast added between the trucks adds to the dead weight without any great increase in traction.

The opportunity to test out these plans came recently as a result of a coast-to-coast horse trade. It seems that demon of speedy wood construction, Bill Hoffman, had on his best oiled harness when visiting fellow modelers in San Jose; resultingly, he returned to San Francisco the proud possessor of a B,A&P engine chassis of Austin design that is in every way a credit to its builder, Norman Huber. Shortly thereafter a representative of the Long Valley visited the Pacific Northwestern shops to learn how on earth any one man could build so many good looking interurban models in a lifetime. Amid a display that was virtually an all time roster of the Sacremento Northern, and influenced no doubt by several rounds of the Golden Gates most potent harness oil, a second horse swap was set up; to whit, the Long Valley would install a twin motor drive in the chassis in return for something yet to be decided upon. Apparently the O,A&E traction line of the East Bay Club found it necesary to use helper engines on some hills, so a heavy engine could be put to good use. In addition to the double truck drive, the specifications called for DC polarized control with a polarity reverse switch, two rail and three rail operation with a suitable selector switch and an auxiliary trolley pole for city street running.

This article, therefore, presents a drive mechanism to provide good hauling aiblity arranged for easy installation in the B,A&P chassis that should appeal to traction modelers who require high performance from their locomotives. Although designed for a specific use, this mechanism can readily be adapted to other similar engines. At this point, let it be said that no criticism of Mr. Austin's original drive is implied whatsoever, rather this is another persons adaptation of an excellent design for a definite purpose. Even the most rubber stamped engines in real life were changed considerably between the various railways to met different requirements.



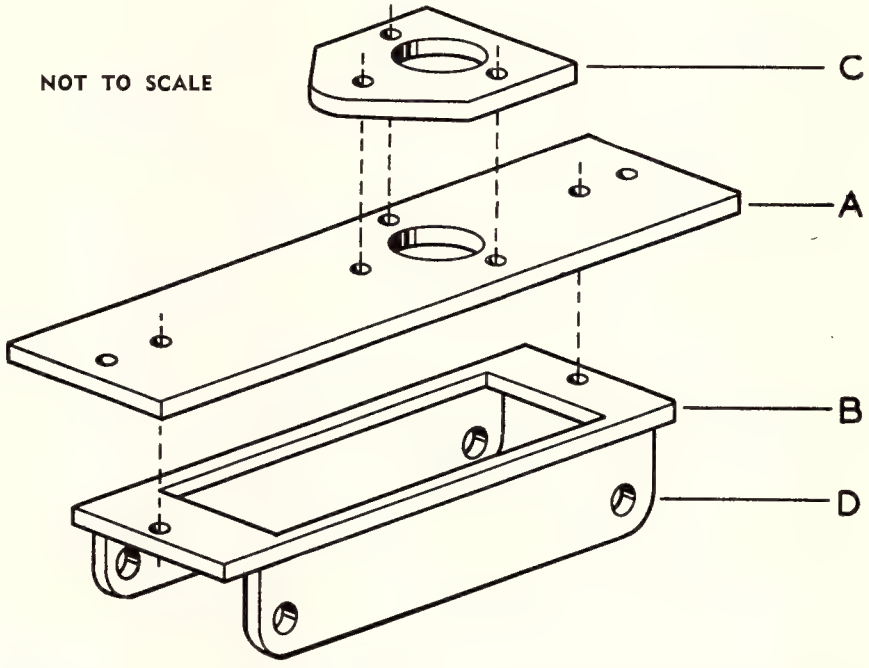
Consideration was given to long life and ease of maintainance so the enclosed type of drive was used that carries the entire locomotive weight on ample sized bearings and arranged to provide constant lubrication to all moving parts. From the photographs and drawing it will be seen that the axles and all gearing are carried in grease filled resevoirs readily detachable for inspection without



Component parts for the power mechanism, in O gauge, as built up by the Long Valley shops and described here.

disturbing the rest of the engine. The entire drive apparatus, consisting of the motor, trucks, ballast block and switch-gear is carried on the bolster, item E, and is removable from the cab as a unit. Each set of truck frames form an independent assembly carrying no load other than drawbar pull. They are fastened to the motor plates, Item A, on insulated fiber blocks hence the couplers are electrically dead at all times for two rail operation. The entire cab is also insulated by means of fiber king bolt bushings. Power for the engine is supplied by a pair of K&D No. 1 motors each driving a truck through 20 to 1 ratio worm gear sets. With the 1" dia. wheels used, this ratio provides moderate speed for heavy work and is directly equivalent to the popular 15 to 1 ratio often used with ¾" dia. wheels for freight service.

While explaining the construction of this mechanism, it will be assumed that the body and chassis parts are available in the Austin fashion so that it will only be necessary to note deviations from his plans. As originally designed, the body and frame were separate pieces held together by screws. Since all our apparatus is removable from the bottom, the cab and frame can be soldered together as a rigid unit with greater strength. Item L, the cab frame, first requires attention. The original unit consisted of a solid floor plate, cut out for the motor, having a sill soldered along either edge. Four holes, tapped 2-56, are to be drilled along the sills as shown then the entire center area is cut away with a jewelers saw, leaving very thin side walls to obtain motor clearance. The cab is now fastened on the frame with the screws



normally used at the ends, then soldered fast along all edges.

The backbone of the whole drive is the bolster, Item E, cut from a piece of ⅛" x ¾" steel. If only three rail use is contemplated so that the trucks need not be insulated, the bolster ends will rest directly on the truck motor pads, Item C, thus making electrical connection to the wheels. An insulated construction for two rail use is illustrated by the units seen in the photograph. Here the bolster ends are reduced to 1/16" thickness so that fiber washers of like thickness can be inserted between the bolster and the motor pads. Fiber bushings surround the king bolt screws while other fiber washers insulate the king bolt screw heads from the motor pads, Item C.

As an alternate to filing the bolster ends to proper thickness, an assembly can be made by laminating two 1/16" thick pieces together with rivets. Two cab supporting members are rivetted to the bolster at the locations shown. Each member is in turn laminated from two 3/32" thick steel strips, the uppermost one cut for a snug fit between the cab

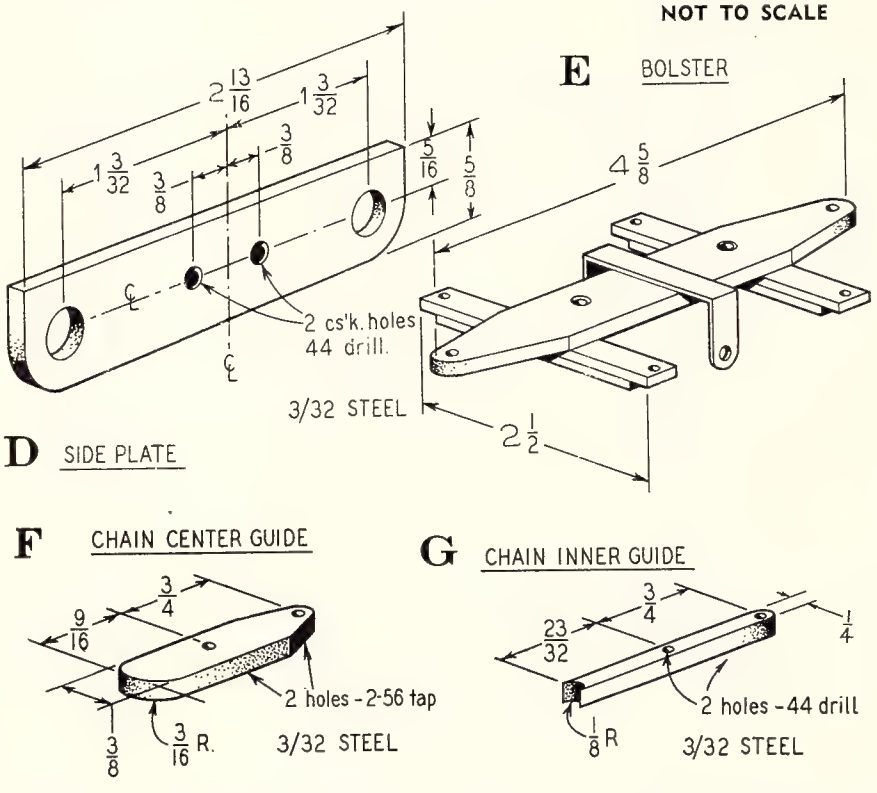
frame sills, while the lower strip contains holes for the cab mounting screws. At the center of the bolster, a U shaped bracket is attached to carry the rectifier, its exact size will depend on the unit to be installed. As dimensioned, it will contain a ¾" dia. Mallory rectifier that has sufficient capacity to handle both motors in parallel. While a rivetted construction has been used for the bolter parts, screws reinforced with solder would form an equally good method of assembly. Two No. 44 holes near the center are countersunk on the bottom side for the screws that hold the ballast block, Item I, in place. The end holes are, of course, tapped to receive the king bolts.

The motor trucks are quite similar in arrangement to the "Enclosed Motor Drive" presented in the October 1948 Model Craftsman so those interested should review the detailed construction method set forth there. All necessary gear items can be obtained from the Boston Gear Works so catalog numbers are listed in the bill of materials. Work on the trucks should properly start with the motor plates, Item A. Although steel was used throughout the trucks shown, there is no reason why brass of equivalent thickness cannot be used just as well, since inserted bearings take care of the wearing problem. Whatever the material, select a piece with 3/32" thickness and cut to the overall dimensions shown, then drill the indicated holes, noting that the holes for the motor mounting screws are to be countersunk on the bottom side. Motor pads, Item C, can now be shaped from the same material to the required size. Rather than attempt a layout on these pads for the holes, it will be easier to solder the pads on the plates than use the plate holes as drill guides.

Next on the list are the truck side plates, Item D. If the four pieces required are cut from ⅝" wide stock, they can be clamped together, shaped and drilled to specification in one operation. The two No. 44 holes, used for chain guide screws, are only needed in two of the side plates, but it is hardly worth drilling the plates separately on this account since the unnecessary holes in the other two plates can later be plugged up. Top plates as shown in Item B, complete the truck structural parts. Cut these plates to the outline set forth and drill the end holes, taking care that they match the corresponding holes in Item A, the motor plates to which they must fasten. Do not, however, cut out the center portion until after the side plates have been installed. As shown in the exploded view, the side plates are located along the edges of the top plates centered between the ends. If the parts are first soldered in place, small screws can be driven down through the top plate into the side pieces and locked in place by resoldering the whole assembly. After this has been done, the top plate can be cut out as required. Now Oilite bushings, turned to ¼" dia. and bored for the axles to be used, are pressed into the side plate holes and soldered fast on the outside. As an aid to soldering, 1/64" thick flanges can be left on the bushings when being turned to act as shoulders against the side plates. These bushings should be filed flush with the inside surfaces of the side plates.

Four axle quills, similar to Item H, are required. These are best made from ¼" dia. steel rod, bored to axle dia., then cut to lengths that will be snug fits between the side plates so as to absorb the side play thus keep the gearing in alignment. Sprockets, having their hubs removed, are soldered on all four quills at a distance of 5/32" in from one edge, while two of the quills additionally mount the worm gears with the faces

NOT TO SCALE



directly at the quill centers. No. 50 holes are started in the worm hubs on the power axle quills and directly in the quills for the trailing axles that will later be drilled through the respective axles and tapped for locking screws. By this means the axles can be repeatedly taken out without disturbing the gear alignments.

The remaining part for each truck is the chain guide made up from Items F&H, soldered together as an assembly. This device is used to support the ladder chain at a safe distance while passing by the worm. Item G rests against the side plate, the concave end nearly touching the power quill. The other part, Item F, is then clamped next to G and is directly in line with the sprocket teeth so that it supports the center of the chain.

At this point it would be well to install all the parts made so far in order to check the alignment. A worm, cut off to ¼" length, is soldered on the motor shaft to line up with the axle gear, in which position the chain will overlap it top and bottom without snagging. Next the wheels are removed from the axles so that the latter parts can be installed with the quills locked in place.

Volumes could be written on methods of determining the correct lengths for the chain loops without being helpful since ladder chain is probably one of the most irregular of all commodities used by modelers. Suffice to say that, unless you are unduly lucky, the trial loops you make up will be half a link too short or too long. Long Valley's method is to cut the chain a half link short, then stretch the resulting loop sufficiently to permit installation. However crude the method may seem, chains man handled in this fashion fifteen years ago are still giving good service so it must have some merit.

With the chain in place the chain guide can be installed and checked for free action. If it binds against the power axle quill, file away the concave end slightly. With the motor mounted on its pad, place the channel bottom on the motor plate and slide into place so that the worm gears are in tight mesh. If the two assemblies are then clamped together, the channel top plate holes can then be used as drill guides to spot the tapped mounting holes in the motor plate. By this method, proper gear alignment is made without recourse to accurate layout work.

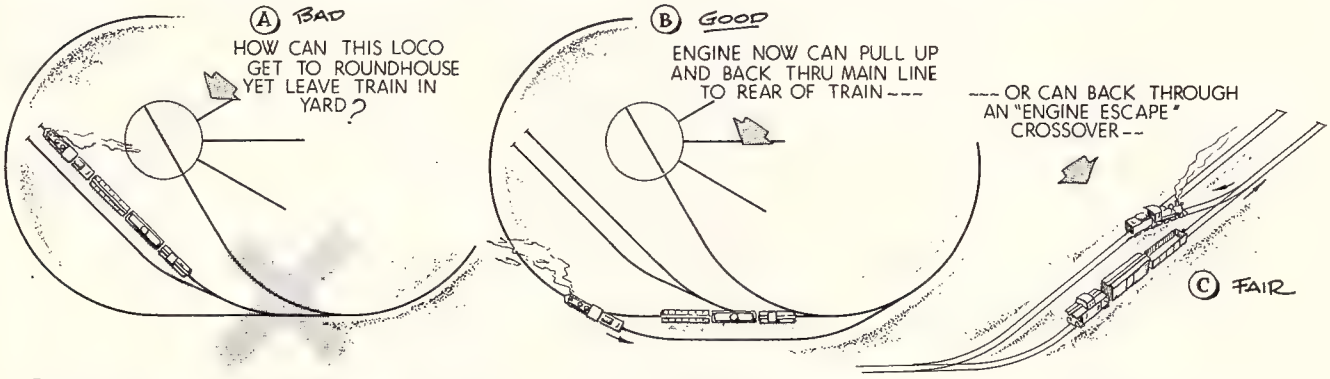
When assured that the mechanism works properly, unfasten the channel and strip out all the internal parts in preparation for installing the sheet metal bottom cover. Ordinary tin can stock will do nicely for the cover so cut a length 1⅛" wide that will provide a 1/32" ridge along each side for convenience in soldering the covers to the side plates. The proper length of these covers is best determined by cut and try process, the ridges can be filed away after the soldering operation has been completed. The resulting channels now become grease tight "crankcases."

(*Concluded Next Month*)

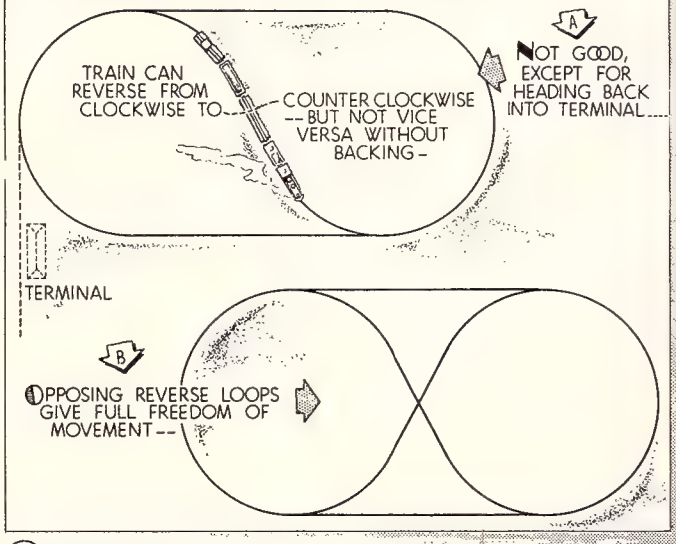
Layout Design Tips

By BILL SCHOPP and BILL LIVINGSTON

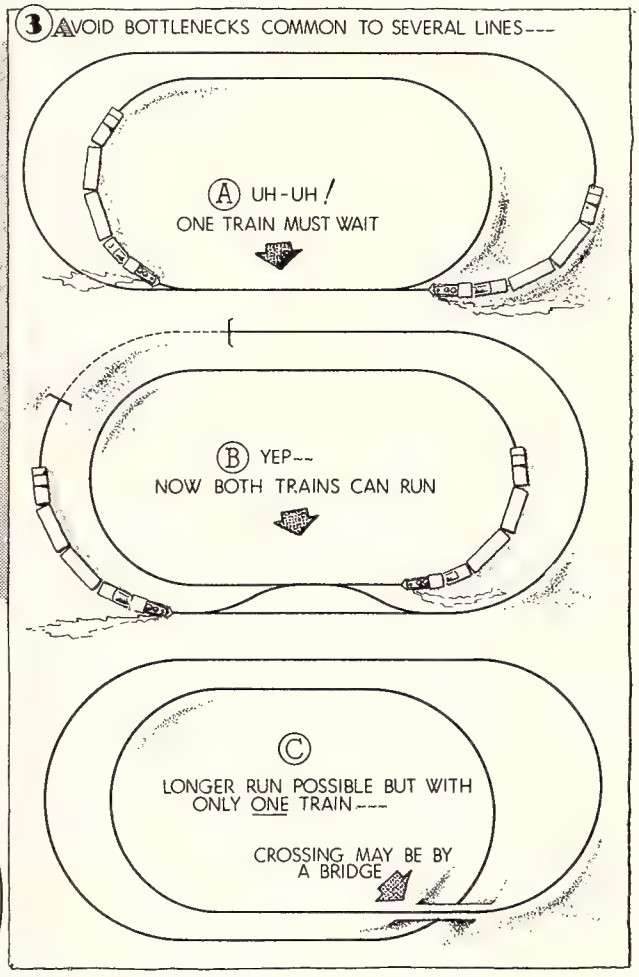
1 PROVISION SHOULD ALWAYS BE MADE FOR GETTING ENGINE TO THE OTHER END OF THE TRAIN WITHOUT GOING AROUND THE WHOLE OVAL ---


A BAD
HOW CAN THIS LOCO GET TO ROUNDHOUSE YET LEAVE TRAIN IN YARD?
B GOOD
ENGINE NOW CAN PULL UP AND BACK THRU MAIN LINE TO REAR OF TRAIN ---
--- OR CAN BACK THROUGH AN "ENGINE ESCAPE" CROSSOVER --
C FAIR

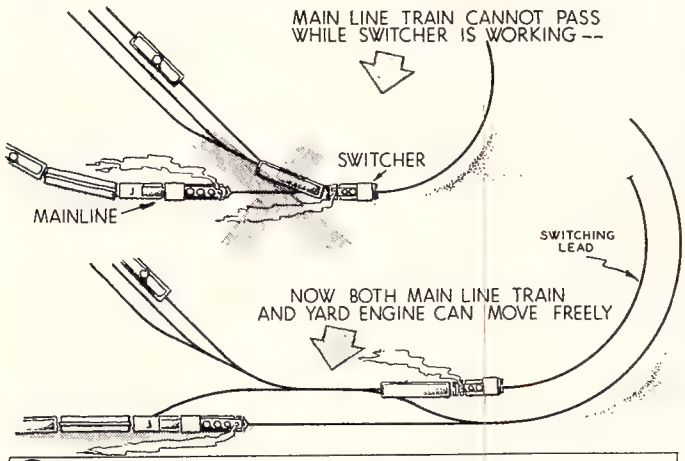
2 ONE REVERSE LOOP MAY BE NO BETTER THAN NONE ---


TRAIN CAN REVERSE FROM CLOCKWISE TO--
COUNTER CLOCKWISE --BUT NOT VICE VERSA WITHOUT BACKING-
A
NOT GOOD, EXCEPT FOR HEADING BACK INTO TERMINAL ---
TERMINAL
B
OPPOSING REVERSE LOOPS GIVE FULL FREEDOM OF MOVEMENT --

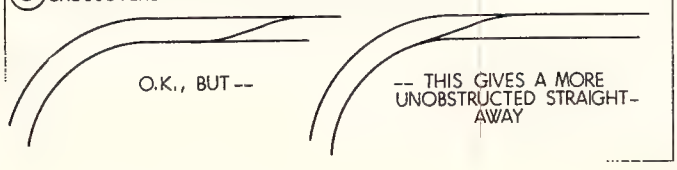
3 AVOID BOTTLENECKS COMMON TO SEVERAL LINES ---


A UH-UH!
ONE TRAIN MUST WAIT
B YEP--
NOW BOTH TRAINS CAN RUN
C
LONGER RUN POSSIBLE BUT WITH ONLY ONE TRAIN ---
CROSSING MAY BE BY A BRIDGE

4 ENGINE WORKING YARD SHOULD NOT FOUL MAIN LINE EXCEPT ON "ONE HORSE" RAILROADS ----


MAIN LINE TRAIN CANNOT PASS WHILE SWITCHER IS WORKING --
SWITCHER
MAINLINE
SWITCHING LEAD
NOW BOTH MAIN LINE TRAIN AND YARD ENGINE CAN MOVE FREELY

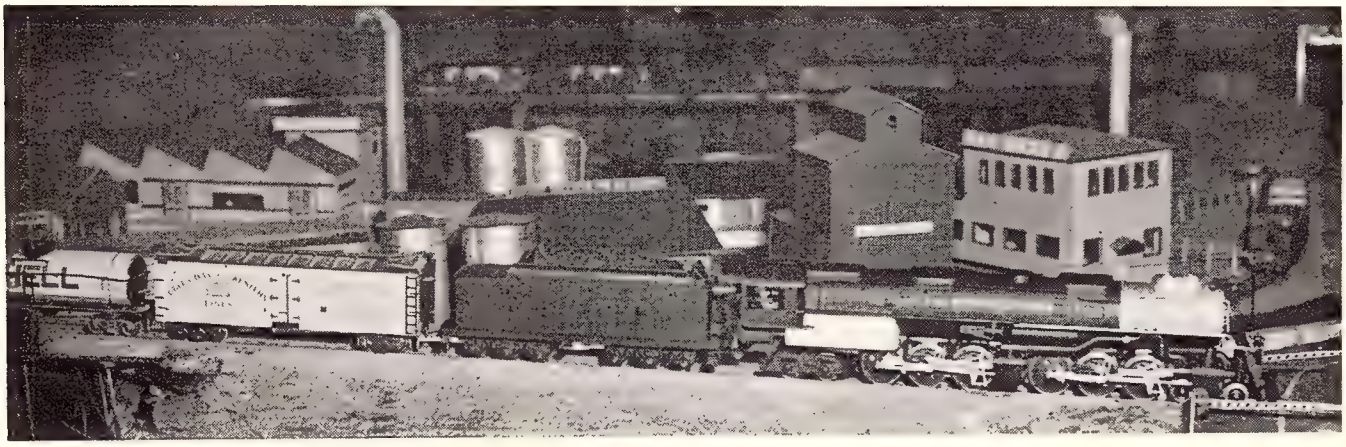
5 CROSSOVERS AT ENDS OF CURVES SAVE SPACE .....



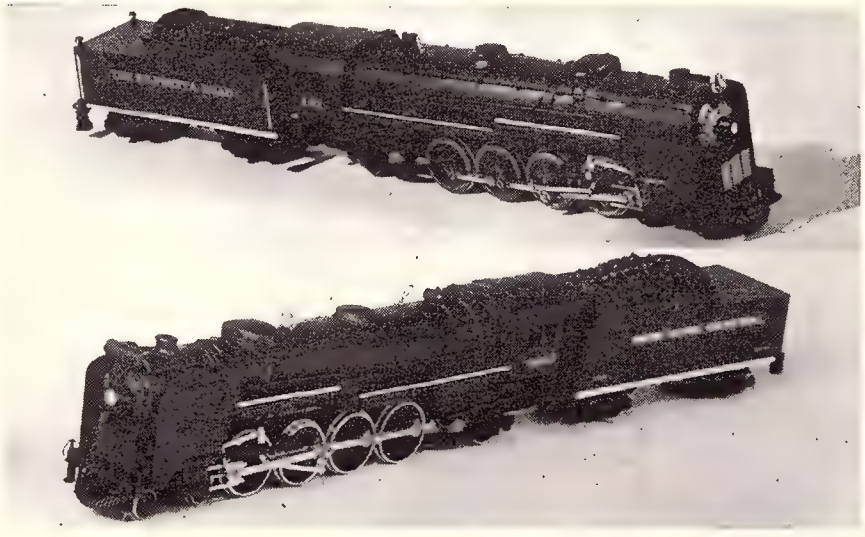
6 AVOID CROSSINGS ON CURVES, IF POSSIBLE

- INCIDENTALLY - HAVE CROSSINGS AT STANDARD ANGLES WHENEVER POSSIBLE ---

15° - 18½° - 30°
45° - 60° - 90°

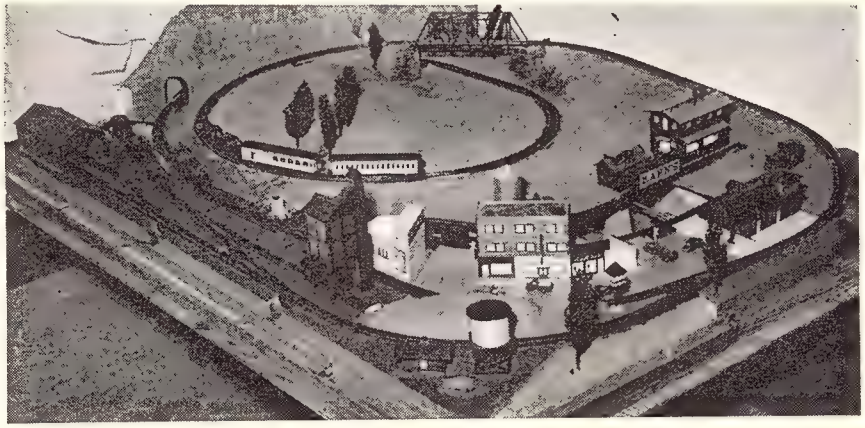


A Bowser 4-6-6-4 Articulated drifting downgrade with a through freight, as traffic waits at a busy highway crossing on Larry Wahl's HO gauge layout. The Bowser loco is equipped with a working headlight and twin smoke units synchronized with the speed of the engine. Most of the structures and scenic accessories were built up from scrap materials in the owner's Pendleton, Ore., shops.



Handsome Twosome. Both locos were also built from standard Bowser kits; the upper one, by Ernest Steen followed no particular prototype when the smoke deflectors, radiator, etc., were added. The lower loco, built by Rodney DuBarton, closely follows NYC prototype. Photo by Hans Geiger Studios, NYC.

Levon Kemalyan of Fresno, Calif., built these two HO gauge section hand cars around his new "Teaspoon of Power" motor truck. The motor is concealed by the load on the rear car. Most interesting models . . . and they run like thieves.



Here's the completed version of the "Cliff Dwellers Pike" described in the April issue, as built by C. G. Fader. This TT gauge pike was landscaped with newspaper and flour paste; can easily be folded out of the way when not in use.

There's detail galore on this HO gaue pike built by Dominic Feliciano of New London, Conn. The many maniature figures and small accessories create a busy atmosphere and a need for frequent railroad service. Note how the landscaping has been developed right up to the structures and the overall natural appearance; even the switch stands are hard to spot.

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The "Gnat Blasting Powder Co.," built from RMC plans, now supplies the town of Flagpole and the neighboring territory with Giant Blasting Powder. This is on a stub siding of an elaborate pike built by T. R. Williams of Albany, Ga. The layout claims more than 3 scale miles of HO and HON3 trackage, part of which is on a trestle in the immediate background. Chas. Johnson was the tin type artist.

Along the Tinplate Track

with Louis Hertz

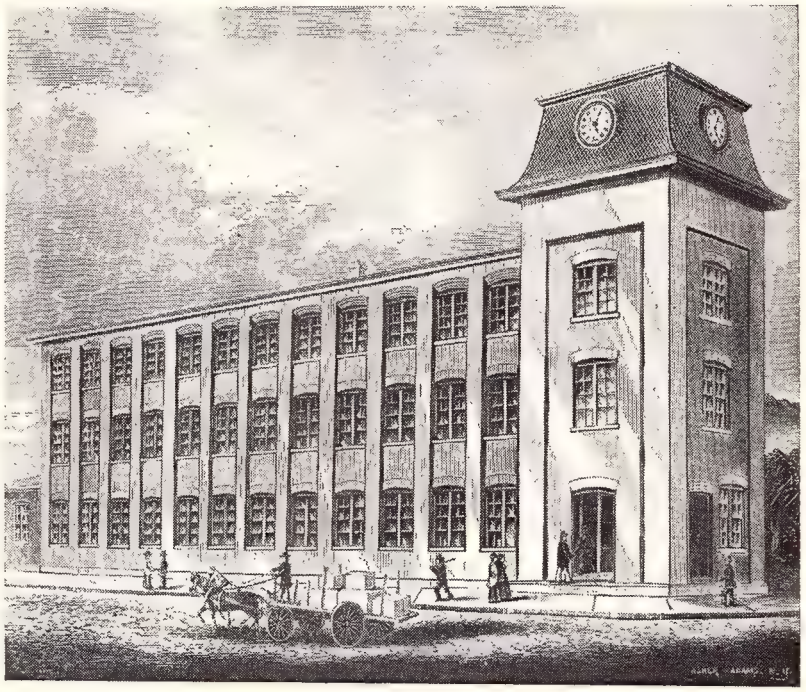
The Relatively Common 0-2-1 Type

THE Whyte system of locomotive classification tells us that if an engine has a four-wheel pilot truck, four drive wheels, and a two-wheel trailing truck, it's a 4-4-2; if another locomotive has no pilot wheels, eight drivers, and no trailing wheels it's an 0-8-0. We freely apply these designations to model locomotives as we do to the real ones. The Whyte system, however, certainly never figured on having to cope with what appears to have been about the standard product of Geo. W. Brown & Co. of Forestville, Conn., in the late 1850's and the 1860's. Nevertheless, following the principles on which the Whyte system is based, the Brown locos are 0-2-1 types. They have no pilot wheels, two drivers, and one trailing wheel. According to the European system which counts axles instead of wheels, making an Atlantic a 2-2-1 type, we suppose we'd have to class the Brown locos as 0-1-½'s!

This sounds, of course, like a locomotive designer's nightmare. The Brown locomotives are important though because there is very strong evidence that they were the first self-propelled model locomotives ever manufactured in the United States. It should be noted quickly that they were trackless clockwork floor locomotives. The photograph of a standard Brown model, and a little midget Brown loco will help to clarify the odd wheel arrangement. The two drive wheels which were geared to the motor, mounted at the front of the locomotive, with drive rods running to cylinders at the rear, did the driving. The single tiny wheel under the cab at the rear of the locomotive did the steering. It could be moved in an arc so as to either send the locomotive forward in a straight line, or let it run around and around in a circle of any desired diameter.

The story of the Brown locos is the story of pioneer tinplate train manufacture in Bristol and Forestville, Conn. It is a phase of tinplate history which has not yet been touched upon in this department, and there are, of course, still many gaps. On the other hand, we are fortunate in having some of the best direct and almost contemporary evidence concerning early model train manufacture that we have ever been able to present. Thanks are particularly due to George W. Hull of Bristol, who in his searches through old Bristol newspaper files was kind enough to copy various notes he came across concerning Brown's activities. The Township of Bristol lies about fifteen miles south-west of Hartford, and includes the city of Bristol and the village of Forestville.

Brown locomotives have puzzled fans who knew of them for some time. As



The George A. Jones clock factory in Bristol, Conn., as it appeared in the early 1870's, when trackless clockwork locomotives were being manufactured in this building. Unlike the Brown shop, clocks were of course the chief product of this factory, although the locomotives were considered important enough to warrant mention in a contemporary account.

suggested, the 0-2-1 model is not an oddity or freak as far as the Brown Company goes, but rather seems to have been their standard and most popular number. Despite their age, they are not unduly rare as such things go, and quite a few have survived. Despite their historical importance, in the general interest concerning Ives they have tended to be overlooked, or relegated to the background. In the earliest days of interest in old tinplate, any trackless tin locomotive was likely to be regarded as an Ives, for they were the only company known to have manufactured them. Later, as it became apparent that there had been a number of other manufacturers, the primary question became "Is it an Ives?" If the answer was "Yes," the model in question immediately seemed enhanced in value and beauty, with exclamations over the quality of the workmanship, the calibre of the design, the richness of the colors, and so on. If the answer had to be "No," there was liable to be an immediate loss of interest. It soon became obvious that the somewhat crude 0-2-1's were not Ives; this was soon settled beyond doubt when one and then others turned up which bore labels pasted on the underside, neatly printed with the legend "MANUFACTURED BY GEO. W. BROWN & CO., Forestville, Conn."

Such labels specifying the manufacturer's name were a rare occurence on early tinplate; in fact, they have only been found on what may be described broadly as Bristol locomotives, although as Brown specified the village of Forestville themselves, it would perhaps be more desirable to term them Bristol and Forestville locos. As far as we know, no other nineteenth century American tinplate manufacturers ever put their names on their product; even box labels were frequently identified only by initials, which while they might mean something to the wholesale trade, conveyed nothing to the average customer. Ives locomotive box labels before 1900, for example, simply bear the initials of the various partnerships, such as "I., B. & Co."

The labels pasted on the Bristol and Forestville locos were a heritage from pioneer clock manufacturing in these places. Bristol is still an important clock city; for at least a while in the early half of the nineteenth century it was the clockmaking center of the United States. These clockmakers were in the habit of pasting paper labels inside their clocks. There were countless factories flourishing in Bristol; clockmaking partnerships rose and fell and went through all sorts of changes with a rapidity that can only be described as both startling and confusing beyond measure. The early clocks had wooden works, but by the 1840's brass works had come into style for cheap, mass-produced clocks, and Bristol

factories were busy turning them out by the tens and tens of thousands. This isn't the place to tell the story of Connecticut clockmaking, but it is important that this terrific clockmaking background in Bristol be mentioned. Incidently, to answer a question we are asked from time to time, there was an Ives family active in Bristol clockmaking, but while they were no doubt related to the famous model train manufacturers, there was no direct or close connection between the two branches of the family.

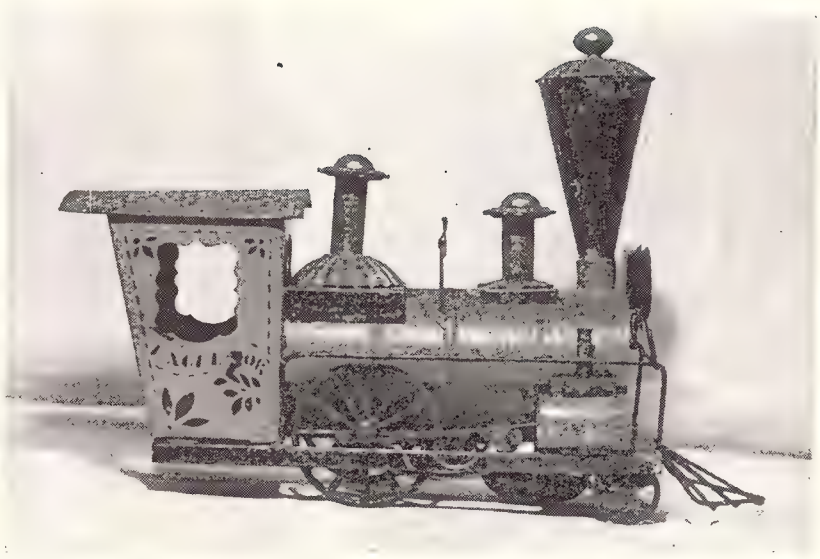
There was a factory in Forestville known as "The Old Red" where clocks had been made, including some by one Chauncey Goodrich. In 1856, Geo. W. Brown & Co. began making clockwork toys in this building, Goodrich, who had given up making clocks being associated with this firm. As an old account says, Goodrich "gave up clock making and went to manufacturing toys with Geo. W. Brown." No earlier references have been found to George W. Brown, although a J. C. Brown was very active and prominent in Bristol clockmaking.

It is very seldom indeed that we have a definite, almost contemporary account of early tinplate manufacture, but just as Brown is almost the one exception who labeled their locos, so are they about the one exception to this as well. An historical account in a Bristol weekly for May 31, 1872, speaking of the Brown toys states that "The first variety manufactured was the toy engine." This unquestionably refers to the locomotive, for one of the 0-2-1's has turned up in the original box bearing the label designation "LARGE ENGINE." We can thereby pretty accurately date these Brown locomotives as appearing in 1856, and continuing through the 1860's. The regulation Brown loco was 10¼" long, had a wooden floor, boiler front and stack, and metal boiler and cab. Windows were stenciled on the front and sides of the cab which was usually yellow; the drivers seem all to have been green, and the boiler front was decorated with a star or sunburst stencil. The stack was of the balloon type, sometimes decorated with painted rivets. Among the names used on this Brown loco—there are, of course, a number of minor variations—were *Hudson, New York, Excelsior,* and *Victory*. A very small Brown loco, in fact the smallest tin trackless clockwork loco that has yet turned up, is also shown in the photograph. This is all metal except for the stack, which is of wood.

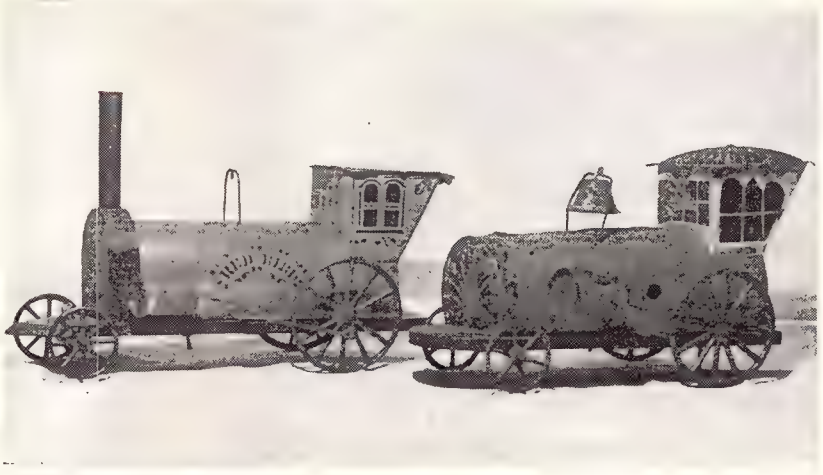
The large *Excelsior,* which has a great deal of ornate trim and is of more conventional 2-2-0 design, is also thought to be a Brown product. The drive wheel seems the same as some on the large 0-2-1's, and the pilot wheels appear to be about the same wheels used as drivers on the tiny 0-2-1, carrying the crank for attaching the drive rod.

"The Old Red" burned down in 1861 and was replaced with a large new shop which was moved from Winsted, Conn., and reassembled at Forestville. It was used as a toy factory, and for manufacturing lamp burners by the Bristol Brass & Clock Co. This building burned down on January 31, 1881. It is variously remembered today by the oldest residents as the "toy shop" or the "burner shop." However, the 1872 account notes that "The main part of the toy business has been conducted since 1869, by a company in Cromwell," only a few varieties being made in Forestville. This probably re-

(*Continued on page* 40)



This ornate clockwork 2-2-0, *Excelsior,* carries an unusual amount of detail for a trackless tin locomotive, including oil cups on the valve chests. It is entirely of metal and is believed to have been a later production of the Brown Co.



The straight-stack *Red-Bird* clockwork 2-2-0 at the left was manufactured by Burritt Darrow and Joseph Sigourney in Bristol, Conn. The other locomotive, with embossed boiler, was probably also made in Bristol or Forestville, although the exact maker is as yet unknown. It may have been a Brown product.

Two Geo. W. Brown & Co. trackless clockwork 0-2-1 locomotives. The larger model, with tin boiler, cab, and cylinders and wooden stack, boiler front, and underframe was more or less this firm's standard design and was made from 1856 through the 1860's. This photograph clearly shows the single small wheel in the rear which could be adjusted so as to steer the locomotive in a circle of any desired radius.

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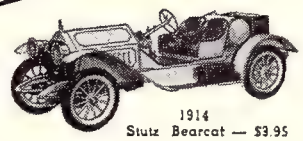

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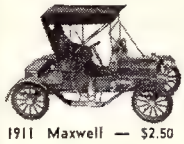

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1906 "Old 16" Loco. $3.95

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The Scrap Box

If you know of any ways of utilizing "scrap" or "junk" on a model railroad, tell us and our readers about it; we will pay one dollar for each suggestion.

AS soon as I complete the construction of a kit, no matter how simple a job, I immediately punch holes in the instruction sheet and file it in a loose-leaf binder. These sheets, together with all possible model railroad catalogs and leaflets I can obtain, form a gold mine of information about the hobby and make any future repairs on my commercial equipment a relatively simple job. . . . *N. B. Gibbons*

I HAVE found that venetian blind slats (which are made of an excellent, warp-proof, stock) can be made into very good car bodies, structures of all types, sidewalks, and many other useful projects around a model railroad. When the finish is removed, the venetian blind stock takes solder readily, or it can be glued and pinned into permanent position . . . *Dick Hutchings*

I HAVE found that Silver Aquarium gravel, at 15c a box, makes a good O gauge ballast. It is larger than bird gravel and is less apt to be messed up, and become engaged in stitchwork. Also fine O gauge stone walls can be made by cementing small pebbles in double or triple layers. This is ideal for modeling the good old New England countryside . . . *Hank Chadwick*

A TOP from the glass of Swifts small size dry beef, when turned upside down, makes a realistic small pond for HO gauge. It can be readily soldered wherever needed to make it stationary and the red rim showing can be painted another color. If the top is bent a little, it looks like a shadow; a bend will reflect the trains as they go by. Strips of brass, tin or aluminum can be used for rivers, and all this material will also reflect any movement. When modeling lakes, rivers, etc., make sure the landscape extends out into the "water." . . . *Lou Rhoads*

REALISTIC car lettering can be obtained by using type, either metal or rubber, from a small printing press. The type can be used with either paint or colored inks however care must be taken in the use of paint so that the inside of such letters as "D" or "R" are not filled with paint to ruin the work. I obtained rubber type from a small "Swift Set Rotary Press," just right for HO gauge . . . *Carroll Hynes*

WITH the coming of more wood body kits on the market, many of us are slightly dissappointed with the paint jobs we get after hours of painstaking work. Before putting that kit together, paint or spray all wood parts with a coat or two of sanding sealer, bought at any hobby shop under the same name. Be sure you steel wool or lightly sand all parts smooth when dry before assembling the various kit parts. You will be surprised at the clean, smooth metal-like car roofs, sides and underbody that is the result of this painting method. The sealer raises the wood grain so when you sand it smooth, the model paint you use will not cause the wood to have that hated scuffed appearance. . . . *Ken Schmelzer*

Control Panel Location

by The Layout Doctor

IN their efforts to have a spectacular, classy looking control panel, many railroad modelers are prone to locate the panels in such a way that they interfere with access to the switches and to the yard or other trackage. It is natural and convenient to have a control panel near the most complicated trackage, usually the yard and engine terminal, since you can easily reach out for adjustments and since considerable wire is saved.

But, to locate a panel directly in front of a yard or terminal is wrong if it interferes with your reach to switchwork, equipment, etc. If a flat top or sloping type panel is desired, it should be placed off to one side, even at right angles to the railroad. If the central location is desired, the panel should be vertical so that it doesn't keep you away from the railroad.

Another common error is to place the control panel in the "Crotch" of an L or U shaped layout. Again, access is likely to be effected; the panel should be moved to one side or the other, or placed in a vertical position.

If a flat or sloping panel is still desired in such an undesirable location, it may be mounted on a small table-like structure on casters, similar to an office typewriter table. The connections to track, etc. must then be cabled so that the panel may be moved out of the way as required. In some cases it may be possible to have the table shoved completely under one section of the layout tablework and out the other side—perhaps the operator may move into the central access pit on occasion or to the other side of a peninsula.

A flat or sloping panel may also be mounted on runners and slid in and out like a drawer, a good stunt if you want to keep the kids from messing with it while you are away.

Try to keep your control panel as narrow as possible, unless mounted vertically. If you hinge it, do so at the top if horizontal or sloping; a vertical panel may be hinged at either top or bottom. If panel is not hinged, some provision, such as screws, should be made for doing work on the back of it without disconnecting the entire unit.

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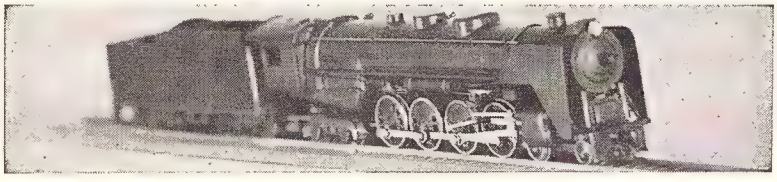

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AS summer draws to a close, the thoughts of that young man which, the poets lead us to believe, turned to thoughts of love in the springtime and the enjoyment of nature in the summer, continue their revolution in the direction of the young man's hobby. And, once complete concentration on this pleasant pursuit has been established, the young man's thoughts will not wander too far throughout the fall and winter—poets or no poets!

What's the program to be? Get that layout down . . . build up a new loco . . . more cars? Lots of kits to build from! H. P.'s great line of locos, from 0-4-0's to mighty articulateds—or a Lindsay "Tiny Tim." Perhaps it will be one of the new diesel switchers being prepared by Kemtron. Cars? Starline offers a large assortment of their fine AAR Box cars, several reefers and tank cars (with more on the way.) Sherman Dance has over thirty reefers to choose from, with new ones coming out all the time. Passenger cars? Jewel's 70 foot coach, Starline's "shorties" coach, baggage, combination, with observation, diner and Pullman to come. Of course, let's not forget H. P.'s MU car—the best value offered in any gauge. Can be run as is —or built into a gas-electric, trolley car, or what have you.

How's your real estate coming along? Garrison offers over 20 buildings, superbly cast in Hydrocal—just paint 'em. Jewel has an extensive line of buildings and trackside structures. Bridges? Starline has two—a Pratt steel truss and a timber trestle. Tunnels? Finish them off with Garrison, Micro Scale or Fry tunnel portals. We could go on for pages! Weston's amazingly realistic mini-figures in TT,—But this should suffice to refute any claim that there is nothing available in TT! But, you say, you'd like even more? That's fair—after all, we are a *growing* gauge. What do you want?

TT TROLLEY TALK:

Remember, in the July issue we told you about Erik Nielson's 4 wheel trolley, operating on a 16" x 21" layout? Well, Erik (of the Bronx N. Y.) has a new 8 wheel trolley, built from an H. P. MU car, that negotiates his tiny layout—3 inch radii an' all! Another of his new trolleys automatically stops at street corners, opens its double folding doors, closes 'em, and starts again! (Get a load of that, you O gaugers.) Details of how this is done will soon be made public. Watch the column. Watch, also, for the announcement of a trolley kit from Mr. Neilson.

TT TECHNIQUE:

For modeling bushes, fine texture Ly-Kn is always good, but something else that will give a realistic TT scale bush is foam rubber. In most cities there are shops which cut foam rubber sheets to size, for cushions, etc. Get some scraps from them. Pick off pieces to the size and shape you want. Cement with Duco cement, and when dry, paint with Floquil green—some dark, some light, or variated. This material works rather well—absorbs the paint and makes a really fine shrub.

Planting grass: Whether you use varying shades of green flock, sawdust (very fine grade) or Celotex dust, dyed green, for grass, a very good adhesive is Cascamite glue. This is easy to apply, and dries dull. Merely follow simple instructions on the bottle. *Signs*: Very attractive signs can be made in a few minutes from match book covers. Cut and use the side best suited—frame with 1/16" balsa, painted green. Cement supports on back to raise it about ¼" from the ground. Covers advertising shaving creams, Beer, Howard Johnson's, etc., look really fine on your roadside, just "outside of town."

LET US SPRAY:

An inexpensive paint sprayer for rolling stock or scenic work can be had from the 5 & 10 cent store for 49c. Made by Evans, it is an atomizer for hair laquer, so go to the cosmetics counter. Thin your paint, and keep the atomizer clean, and it will give you years of fine service.

FROM THE TT MAIL CAR:

Ralph Burnside, of Cohoes, N. Y. writes: "—Have a Pacific loco, and want a string of coal cars to haul. Can I get kits for hoppers?" Well, that's simple, Ralph. Ask your dealer to get you H. P.'s hopper. This is a fine metal and wood car—simple to build and realistic in appearance. Only $1.50, with trucks.

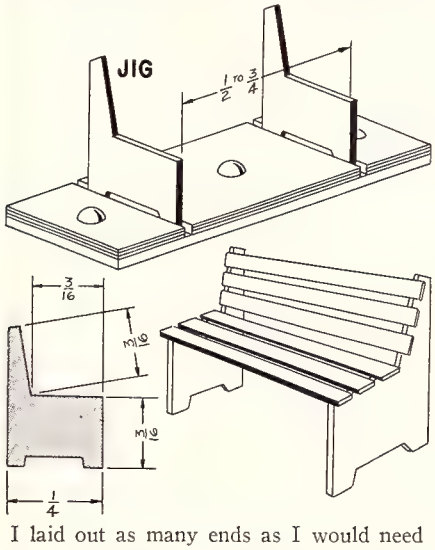
A modeler who signs himself "Diesel Dan" writes: "You guys are "steam screwy." Get modern! I want to get into TT. What can you offer?" Well, maybe we are "steam screwy"—I'll admit I am, but you *can* get modern *and* come into TT. H. P. (our gauge's daddy, Hal Joyce) has just what you want in a road diesel outfit A & B units and a string of Budd streamlined cars. C'mon in, Dan, the gauge is fine!

Raymond Hawley, of Kansas City asks: "I'd like to build coaches, but want lights—Can I do this in TT?" Yes, Ray, I'm sending you plans for lighting installations, but the simplest and best is the kit made by Scalite for Starline's coaches. This affords even light throughout the car by means of one bulb and a plastic bar. Complete from Scalite or your dealer, $1.25.

S'long till next month. Send in your suggestions, gripes, and photos ($5 for each picture used).

— Platform Benches in HO —

I MADE up a group of benches to place along the platform of my terminal station, and to place also at outlying suburban depots. I made them all at one time, using only poster cardboard, quick drying cement and paint. First,



I laid out as many ends as I would need —and a few extra to allow for spoilage —on the cardboard, utilizing my mechanical drawing set. Then I cut these out carefully, using my X-acto Knife. A razor blade would have done but is harder to use.

To hold the ends upright while cementing I made a simple jig as shown. I spaced three pieces of cardboard atop a scrap of car flooring, so that the ends would be held upright the correct distance apart—four scale feet. These three pieces I cemented in place, tacking the whole business to my bench to keep it in hand. Now I could set two ends in the slots, and cement on the splints forming the seats and backs of my benches. I had previously slit these strips up from cardboard, again using my Exacto knife, then straightened them by running through my fingers.

As I completed each bench I set it aside, and, after the whole bunch were done I painted them one by one. I made the seats and backs brown and the ends yellow, these being my standard road colors. Of course for park use, benches would be either green or cement color. Thus I spent an interesting evening and added extra detail to my model pike . . . *Warren Kopak*

TWENTY-TWO calibre shells have many uses on a model railroad: a stack, part of a headlight, air tank (need two), and as a barrier to keep cars in the parking yard from sticking out and fouling the railroad . . . *Wm. Harris*

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AD-A-PANEL

LOS ANGELES, CALIF.—The recent merger of the Metropolitan Club (Los Angeles) and the Valley RR Club, Inc. (San Fernando Valley) resulted in the reactivation of the former O gauge layout "Pacific Terminal Railroad" in the old SP station.

The basic organization consists of an Executive Committee and General Manager under which operational responsibility is delegated to a Signal Engineer, Division Engineer, Master Mechanic.

The layout is located in an area 100 x 30 feet and has approximately 4,000 feet of track including the 175 car capacity freight yard and the coach yard which accommodates about 35 pieces of passenger equipment. A large improvement program has been undertaken by the new organization, the most recent being a change over from a battery power supply to a twin unit power pack system operating at 20 volts, 40 amps with a third unit for relays and signals.

A Club show, held early in June, was most successful. Another show is scheduled for October 5th, 6th and 7th when it is planned to have a model display in addition to operation. Any communications to the Club may be sent in care of the secretary, 7702 Bakman Avenue, Sun Valley, California. Meetings are held on Friday night each week with the first Friday in each month devoted to a business meeting and the second Friday to operation at which time visitors are welcome. The location of the old Station is at 5th Street and Central Avenue.

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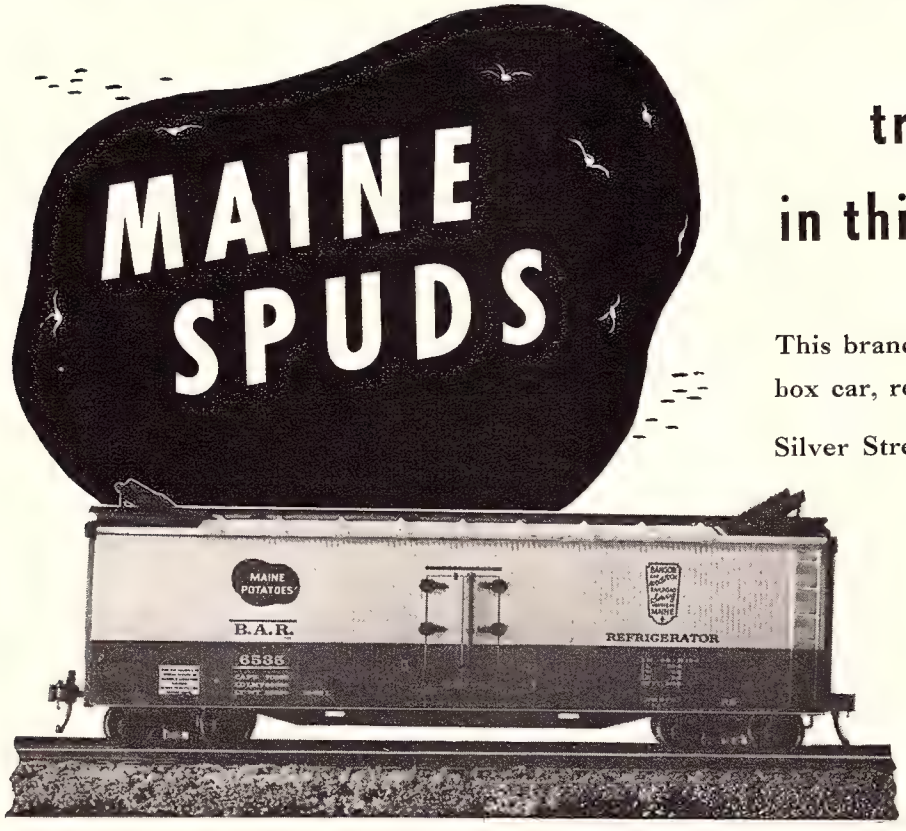

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AND LAYOUT DOCTOR ANSWERS

This Department is for the benefit of all readers. Questions will be answered through these pages or direct by mail by one of the country's leading model railroad authorities. If you have any building kinks of your own, send them in.

Old Type HO Couplers

ON a lot of old freight cars (HO) I bought recently were couplers of a type I have been unable to duplicate. The visible part was a flat brass hollow square, around 3/16" x ¼", with a downward projecting hook. Back on the shank is a machine screw through a piece of tubing evidently forming a pin for the ramp to lift. Have shown these to several model rails hereabouts and to my nearby dealer, but they cannot tell me anything. Would like to obtain more, since they work very well. . . . *T. Carrington, Jr.*

ANSWER: Sounds and looks like the original Mantua automatic, which have not been made in that form for about twelve years. I doubt if any are around except as you found them, on old cars, but you will find that they work very well with present day Mantua couplers which are even better adapted for coupling and uncoupling on curves. Wonder if any of your cars had any of the original Mantua "jiffy" trucks with stamped brass side-frames: the journals were just holes in the brass. These sold for fifty cents a pair in those days, uninsulated, for who ever heard of 2-rail or thought it would be universally used in HO? Present day trucks are really a bargain compared with these pioneers considering greater detail, insulation, etc. but "back in the days" we thought the "jiffys" were hot stuff.

Hump Yard Operation

I WOULD like to build a working hump yard on my proposed HO model railroad, but the few experiments I have made indicate that I canot use my present brand of couplers, much as I like them, since slack must be taken up in order for them to uncouple on a ramp. What do you recommend, also what grade do you suggest for the hump? . . . *I. R. Berger*

ANSWER: The automatic couplers must obviously be a make which do not require taking up slack to uncouple. I believe both Kadee and Baker will fill the bill, and if there are others I'd like to hear about them, too. The grade down from the hump is subject to experiment, but I'd suggest 8% (1" drop in one foot) for a foot or so, then taper off to 4% (1" drop in 2 ft.), then 2% (1" drop in 4 ft.) It depends on how free-rolling your trucks are and on the curvature of the tracks. Try to arrange your tracks so that you do not have to pull *out* over the hump: make the yard double-ended. To keep coasting cars from fouling switches at exit end, narrow the track gauge to an absolute minimum at the end so that cars are pinched to a stop but not derailed.

Streamlined Terminology

I OBTAINED some streamlined car blueprints from one of the railroad companies to use in building some O gauge model cars. There is one word used on the plans which I cannot fathom and it is not in any of my dictionaries. The word is tumblehome—not certain whether it's one or two words. Do you know how it applies here? . . . *Frank C. Mercer*

ANSWER: Some streamlined cars and locomotives have vertical sides (of course), but just below the roof line, the sides slope inward. This inward sloping part is the tumblehome (one word). Originally the word referred to a similar inward slope on the hull of a ship.

Most Practical Signal Type

WHAT type of signal is preferable for model railroad use — semaphore, color light, searching light, position light, or what? . . . *G. Phillips*

ANSWER: Color light and searchlight seem to be the most popular types, but they often cannot be seen by the operator or spectators if correctly placed. If placed with the operator in mind, many would not be visible to your little engineer. Consequently, a semaphore is best since it can be read from the "cab" or the control panel; furthermore, the action of the blade rising or falling adds movement to your layout and hence interest.

Operating Loco Headlights

NONE of the HO gauge locomotives I have inspected seem to have a working headlight and, indeed, owing to the way the dummy lights are mounted it looks impossible to make such a thing. Could you give me instructions for doing it? Can the light be kept on when the train is stopped? . . . *J. R. Fogal*

ANSWER: You don't say what type of engine you want to light up, steam, diesel, etc. but most model rails prefer not to use a super-tiny grain of wheat lamp in a slightly oversize housing, although it has been done. The favorite way is to drill through the headlight, insert a piece of lucite rod, then mount a regular toy-train headlight bulb, 12 or 18 volts, inside the boiler or diesel body. The bulb should be masked in such a way that no stray rays leak out and spoil the illusion. This is compartively simple on most locos of diesel type or of steam type where light is mounted in the center of boiler front. Where light is mounted away from boiler front, at the top,

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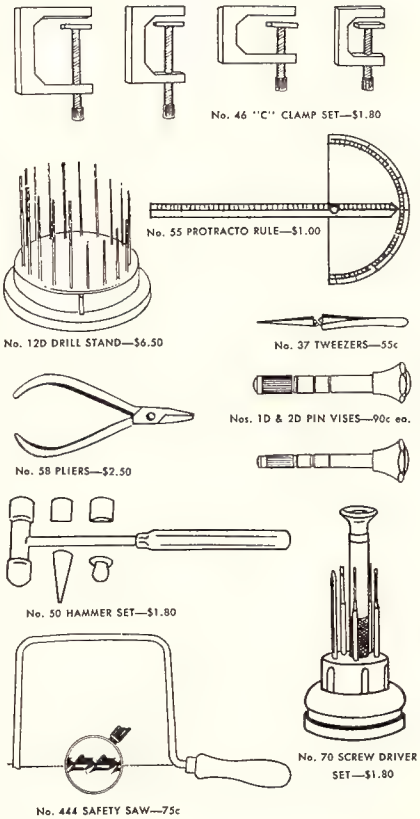
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the lucite rod must be bent to get the light up there.

To keep light on when train is stopped, you should use a flashlight bulb without recourse to propulsion power and hide a few batteries in the tender or second unit if a diesel. Wiring of course must be insulated from the usual 12v. which runs the train, and some way should be provided for turning light out to save the batteries. Batteries are usually used to light *any* of the grain of wheat sized lamps. Another method used involves a relay which lets in track power (usually through a resistor to reduce its voltage) when train is running, but throws on battery power when train is stopped or running slow: this takes too much space for most HO engines. A more complicated way of keeping lights on when train is stopped involves superimposing high frequency A.C. on the D.C. propulsion power. Unless you like to fiddle with electrical circuits, better keep away from this.

Locomotive Accessories

WHY do some locomotives have the air-tank placed cross-ways on top of the boiler in front of the stack? . . . *James Mahaffey*

ANSWER: That's no air tank; that's a feedwater heater. Another type of feedwater heater might look to you like an extra complicated air-pump on the side of the engine.

Switches On Curves

I HAVE read in your fine magazine and in other literature the stipulation that it is not good practice to put switches on curves in model railroad construction. Yet in several locations on real railroads I have seen switches on curves, and on heavily traveled track, too. What is the reasoning in back of not putting model pike switches on curves? . . . *A. A. Candellero*

ANSWER: Real railroads have almost an infinite amount of room for their switches, compared with us modellers, and the radii of their curves are much, much larger than ours—so large, in fact, that they are usually not stated in anything but degrees. If in HO gauge, for instance, you could swing a six foot radius curve from the inside of an eight foot radius, you probably wouldn't even need the speed restrictions that the prototype roads need for comparable switchwork.

The second reason is that the vast majority of the railroad modelers in the country prefer to work with commercial kit or built up switches which cannot be built into a curve without revision. If you want to build your own switchwork, you can put switches on curves if you care to. With a little care they can be made to work fairly well.

Trolley Overhead

BEING greatly interested in model electric traction, I lack the skill to build a system of overhead wire which I think you'll agree is essential to realistic appearance and operation. Is there any way I can obtain this in kit form or even ready made? . . . *E. Rose*

ANSWER: Not sure which gauge you are interested in, but in O gauge Pittman has a system of trolley wire which can be erected with no necessary soldering. We understand dies have also been begun for an entirely different system of HO trolley wire, but cannot say when or if it will be available, due to defense restrictions.

Marklin, European makers of HO tinplate equipment, has a system of line poles and overhead to go with their track which doubtless could be adapted to scale use. The wire here is a strip of metal deriving its rigidity by being set on edge. This is for pantagraph operation only.

You might also be interested in making a dummy overhead system. Run

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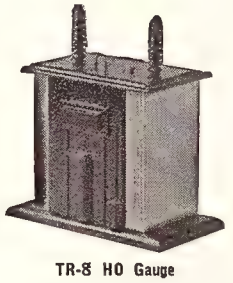

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your cars or train two-rail, but make up a non-working trolley wire out of thread and cement, or wire and solder. Its location will not be too critical. Experience gained in making dummy wire overhead comes in handy if you ever try to build working overhead.

Layout Table Work

WHAT type of wall-board is recommended for a model railroad table? I laid out a lot of money for an expensive piece of plywood, but find that it is too hard to push spikes into, they just curl up. . . . *Mel MacLees*

ANSWER: It's the glue between the layers of plywood that stops your spikes and if you want to use it (and get something for your money) you'll have to use heavier spikes or small brads, or else drill tiny holes for each spike. O gauge spikes are getting to be much preferred even by HO gaugers, since their greater length gives them a better bite, and the heads are no biggegr than those on HO spikes. By the way you'll find that either hard or tempered masonite is too hard to push spikes into, also.

I prefer a ½" thick grayish wallboard called Homosote, which is quite inexpensive and holds spikes well. When placed horizontally it should be supported every 16" or even closer with joists running one way, else it will sag in the course of time. Celotex is also widely used.

The ideal material to take and hold spikes is plain ol' wood. Commercially shaped roadbed, with or without ties, often uses California sugar pine and if you have ever used any you know how nice it is. Which brings up the matter of why have a top to your table at all? Just elevate the roadbed as needed, fastening the supports to the joists and covering the left-over space with scenery.

HO Ga. C. P. Huntington

I WOULD like to model the C. P. Huntington in HO gauge as an operating model and wonder if you could give any suggestions on powering it. I would like to use standard parts as much as possible, such as Mantua pilot, stack, headlight, etc. from the Belle of the Eighties. . . . *A. Mahaffey*

ANSWER: According to my rough observations, a Lindsay motor would fit in the stub tender if covered with quite a pile of "wood". But your use of standard parts "as much as possible" makes me wonder whether you have the model engineering ability to do this, since the mounting would be a little tricky owing to the clearances. Might be better to use a "Ghost" power unit in an adjacent freight or passenger car.

I understand that parts will be available soon for this engine in HO.

Switches and Turnouts

IS there any difference between a switch and a turnout? . . . *M. Melish*

ANSWER: If you are referring to trackwork, none. Turnout is just a fancy name which is useful to avoid confusion with toggle and other electrical switches. The British call switches, or turnouts, *points*.

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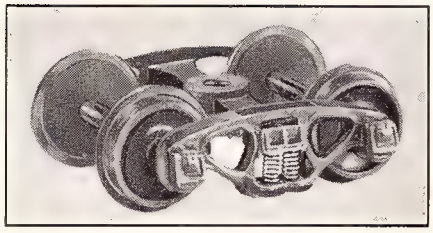

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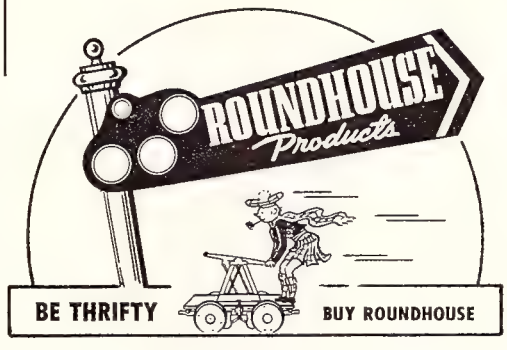

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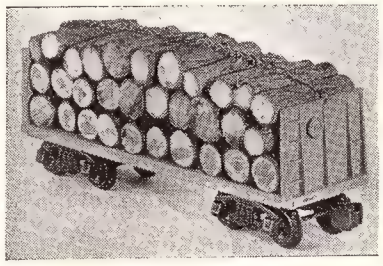

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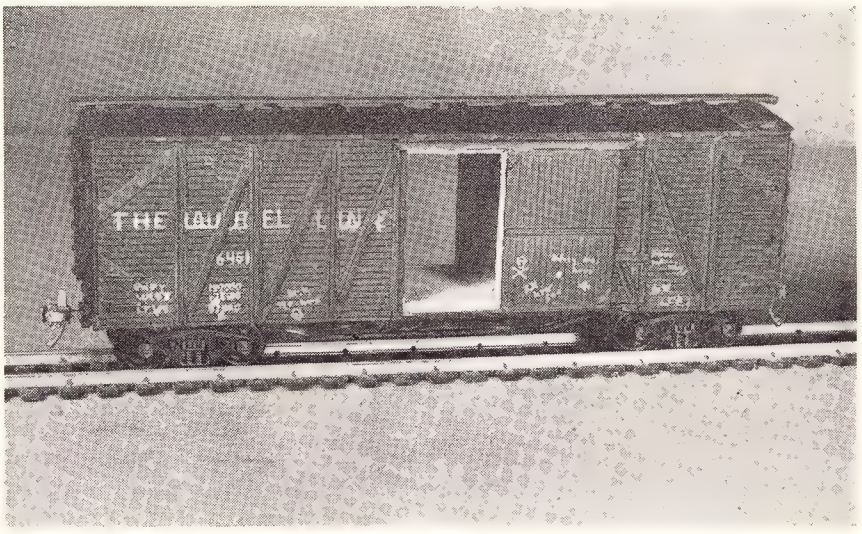


The author's HO model, built from scrap materials and commercial parts using a photo as guide.

the Laurel Line's Latest

Armed with one key dimension and a photograph of the prototype car, the Laurel Line shops turned out this interesting old-timer, an HO model basically of wood construction.

by GIL WESSEL

IT is always a good idea to carry a camera whenever you think you'll see some railroad equipment. A .35mm camera is very good for the model rail although I used a 2¼ x 3¼" press type for the photos shown here; the latter can be focused very close.

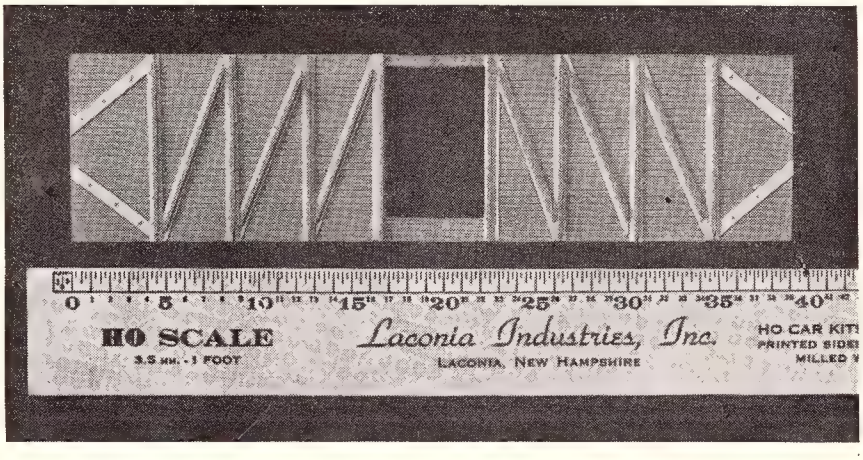
But let's get on with the braced side box car. The photo showing the B&O prototype was the only data used in construction of the HO model which is made basically from standard kit parts. The sides, a scale 39' long, were made from 1/16" bass wood with lines scribed on to simulate planking. The "wood" braces were made by first gluing strips of filing card stock to the sides, on top of which 1/32" square stock is cemented. These 1/32" square pieces were rounded off on the ends. The two strap iron braces on either end of the sides were made from card with bolt heads punched in from behind.

With this much done, Silver Streak door guides and doors were cemented in place. Next, I cut floor and roof stock to the exact length of sides and dummy end blocks to the length needed (dependent on thickness of floor and height of ends used). Silver Streak Youngstown ends were used, similar to the prototype; the entire assembly was then cemented together.

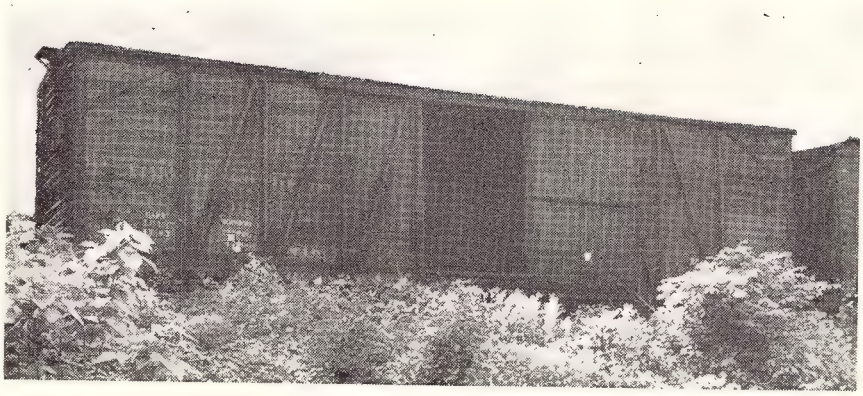
Commercial stamped metal roof ribs were put in place together with the roof walk (three 1/16 x 1/32" basswood strips). The latter was blocked up off the roof with scraps of wood. The roof end walks were made from more 1/16 x 1/32" material, glued on two 1/32" square pieces.

Silver Streak staple steps, spaced 3/16" apart, were located on the car sides; I advise punching holes for these along a straight edge with a needle held in a pin vise. Varney plastic ladders and brake set were then cemented in place on the ends.

For the underside of the car, Silver Streak body bolsters were cemented in place ¾" from the ends. Underframe was



Photographic plan of the car side. Dimensions can be gauged from the HO scale ruler.



This photo and one key dimension formed the "Plans" for model shown on opposite page.

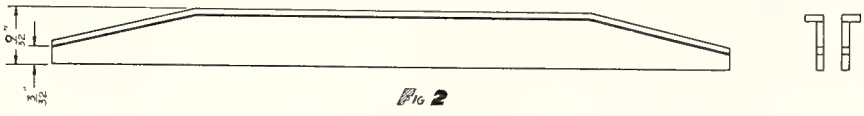


Fig 2

UNDER FRAME

(MADE FROM 1/32" BASS WOOD)

built from 1/32" bass wood, 9/32" high, length to fit between bolsters. The underframe was tapered to 3/32" high, ¾" from either end. Athern die cast brake set was then added together with couplers.

The car was painted with 41OM tuscan red on roof, ends and sides; flat black on the underside. The lettering was done with a fine line Esterbrook pen and Carter's white ink although decals could have been used. Besides the usual lettering, I added some scribbling like you see on almost every piece of prototype rolling stock.

Overall construction time was about seven hours, the sides being the hardest phase. The model might not be a prize winner, but I can truely say "I built it myself." So until my camera and I see another interesting piece of rolling stock, if you have any photo or modeling problems, I'll be glad to answer all questions personally.

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ALONG THE TINPLATE TRACK

(Continued from page 29)

fers to the still little known firm of Stevens & Brown of Cromwell, Conn., who are known to have manufactured clockwork trackless locomotives in the early 1870's. The Stevens name probably indicates a connection with the J. & E. Stevens Co. of Cromwell, manufacturers of iron toys. Geo. W. Brown & Co. are listed as having a showroom in New York in the 1867/68 Directory, and again from 1870 to 1874. The 1872 Directory mentioned the name of "Laura T. Goodridge" after the firm name, suggesting the rather unusual circumstance of a woman in charge of a business of this kind at that time. It seems likely that the name was misspelled and was actually Goodrich.

A correspondent to *The Scientific American* in 1867 asserted that the factory in Forestville was the only one in the United States manufacturing mechanical "imitation steam engines" at that time. Until some evidence to the contrary comes to light, it definitely seems certain that in 1856 Geo. W. Brown & Co. started manufacturing the first self-propelled tinplate locomotives produced in the United States. It would also appear that their manufacture stopped in Forestville in 1869, although some of the unlabeled 0-2-1's which have turned up may have been made by Stevens & Brown in Cromwell. Judging from the one definitely known Stevens & Brown design, however, the Cromwell productions in the model locomotive line were somewhat more advanced in styling. Still, as noted before, a rather goodly number of the 0-2-1's have survived. Either it was extremely popular, or they were still made, either in Forestville or Cromwell, somewhat longer than has been suggested.

There were other trackless clockwork tin locomotives made in Bristol. The wooden frame and boiler front, and the cab design and finish of the *Red-Bird* bear somewhat more than a passing similarity to the Brown locos, although it has a 2-2-0 wheel arrangement, and the metal stack is of definitely later date. A *Red-Bird* has come to light with the original label still pasted to the underside of the frame, bearing the legend that this model locomotive was manufactured by Burritt Darrow and Joseph Sigourney, Bristol, Conn. It is 11½" long, and the front of the wooden frame has been shaped to the suggestion of a pilot. Joseph Sigourney came to Bristol in 1845 and bought a fruit and confectionary store just before the Civil War. Later he operated two stores, side by side, one a fruit and confectionary, the other a jewelry and variety store. Nothing can be found, however, referring to his engaging in any manufacturing enterprises; his connection with the tinplate locos may have been purely financial. No information has been turned up concerning his partner, Darrow, although the fami-

ly was prominent in Bristol and at least one member had manufactured dolls there in the 1860's. Mr. Sigourney retired in 1881, and died in 1887, so the *Red-Bird* must have been produced prior to the latter date at least.

The other 2-2-0 in the photograph with the *Red-Bird* has all the ear-marks of a Bristol locomotive. The boiler and boiler front are ornately embossed metal. It had a wooden balloon stack, and the wheels and certain other details suggest Brown manufacture.

A third firm name in connection with Forestville and Bristol locomotives is that of George A. Jones, another clock manufacturer. An 1874 account mentions clockwork locomotives and other mechanical toys being produced by Jones. The implication is rather definite that they were Jones' own products, but it is just possible that they were simply made on contract in the Jones factory for the actual manufacturers; in this case possibly Darrow and Sigourney. This is, of course, the conservative way of looking at it. On the other hand, the township where the first clockwork locomotives were produced may very well have had three independent manufacturers over the course of twenty or thirty years. In fact, who knows but what there weren't even more?

New Tinplate Publications

Don La Spaluto, 9116—210th Place, Bellaire, N. Y. has just brought out full-size silk screen reproductions of the familiar old Ives box tops of the 1920's, complete with the 3243 locomotive and cars, the smiling boy looking down on the train, and the famous slogan, "Ives Toys Make Happy Boys." They are 19½" x 16½" and, framed, or unframed, would provide a wonderful wall decoration for any model railroad room or hobbyist's den. The price is $1.50 each. They are printed on heavy cardboard, either on a dull orange-red approaching the color of the original Ives boxes of long ago, or on a bright yellow which makes the reproduction perhaps somewhat more striking and colorful from an artistic standpoint.

W. K. Walther's latest booklet, *Toy, Tinplate & Scale Model Railroads,* (75c, Wm. K. Walthers, Inc., Milwaukee 2, Wisc.), has already been reviewed elsewhere in an earlier issue of this magazine, but certainly deserves mention here again as one of the latest contributions to specifically tinplate literature. It contains a great deal of interesting and valuable information, aimed primarily at the O gauge fan who is interested in broadening his horizons, so to speak, by adding cars he builds himself to his tinplate equipment, setting up improved track patterns and control circuits, etc. Bill Walthers is one of the real old timers in this hobby, and has written an enormous amount of material of interest to every fan. Historically minded tinplate fans will find the numerous reproductions of early tinplate coupler patent drawings in his booklet *Couplers, Coupling and Uncoupling* especially intriguing.

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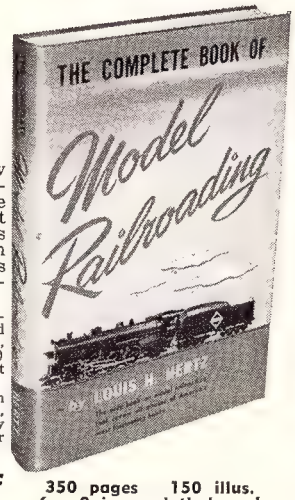

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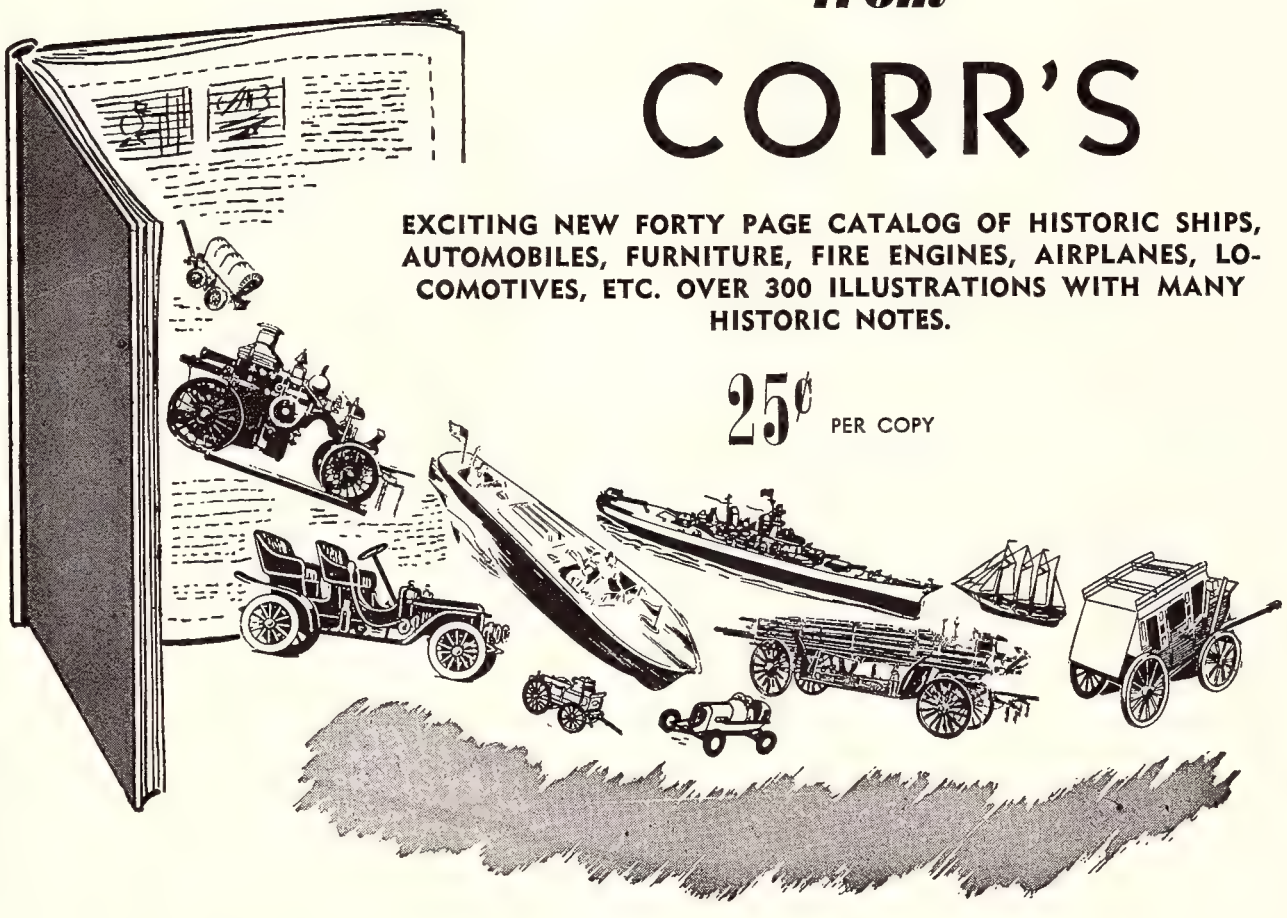

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by ERNEST STEEN

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The best method that I have come across to *age* buildings is the application of powdered chalk, dry, on the surfaces to be doctored. For this purpose, I find imported "Conté" Crayons (made in France) the best material, since they are soft, have good color and adhere extremely well in the dry state. Conté Crayons are available in better art supply stores and come in small, square sticks. One stick each of black, white and dark brown should last a long time. Don't cut the crayon but shave it into a fine powdery mass by keeping a new X-acto knife blade or single edge razor blade almost parallel to the longer surface of the crayon.

According to the area to be covered, shave almost equal amounts of black and white and another approximately one-third portion of brown. Keep the powdered chalk in individual piles and then merely dip your little finger in each pile and mix in a small amount of each color this way.

Due to the moisture (perspiration) on your finger, the chalk will adhere readily and can then be applied to the building side in vertical strokes. Where larger areas are to be more uniformly covered, as platforms, etc., use a circular motion of the fingertip in applying the chalk. For inaccessible places, close to roof tops, along projecting objects, etc., small brushes can be used however in most cases, the brush will have to be moistened a trifle to make enough chalk adhere (unless the atmosphere is extremely humid). By varying the color composition as the chalk is picked up on the fingertip, any desired shade can be mixed, varying from the blackest soot to light grey cement dust color.

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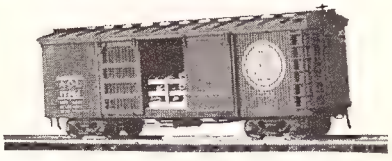

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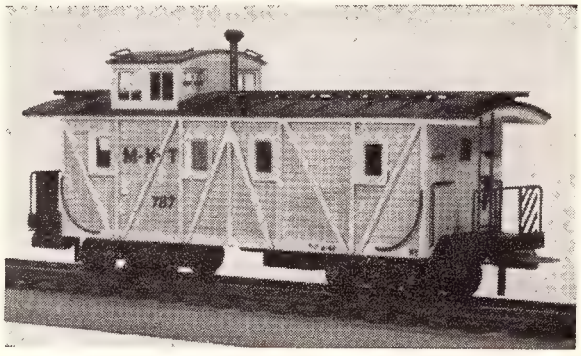

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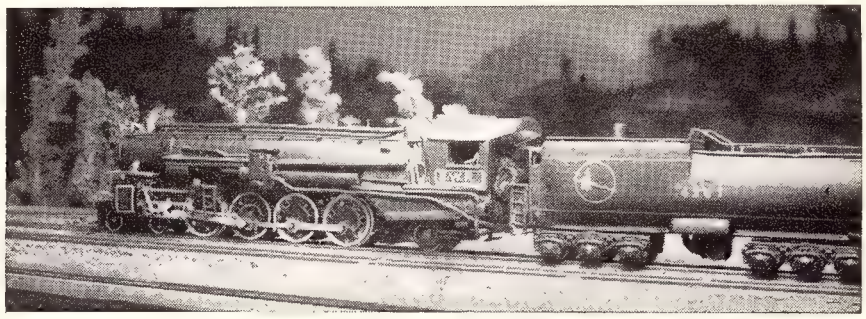

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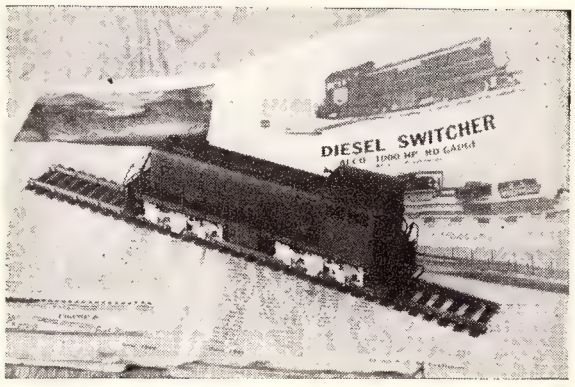

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A New Use For Old Engines

ALL my recent engines are completely home-built with the exception of wheels, gears, motors and a few other items such as hand-rail posts which it is cheaper to buy than to make. The recent shortage of motors that can be bought over the counter hit me hard until I decided to take the motors from my older engines to power the new ones. I picked on the locos that were in general the least satisfactory in looks or operation, chiefly due to my own inexperience at the time: I removed the motors from these engines as required.

This left me with a surplus, constantly growing, of engines without motors, at present five in number. One I did tear down to re-use the wheels and gears, but for the others, and any future ones, I hit on the following idea which I pass along. I gave these surplus locos a new paint job, boxed in the cab with wood (scribed cardboard), removed headlight, bell, connecting rods, and whistle, and lettered them for foreign roads, chiefly Latin American. One, which had no pilot anyway, I supplied with buffers, and lettered *Congo, Bongo & Atlantic* for service in Africa. So now my old locos are rebuilt engines enroute for export. Since motors are out, and connecting rods removed, they roll very well and I cut them into my freight trains where they certainly add interest.

I have built the "Eight-Ball Locomotive Works" described in the Feb. '51 Railroad Model Craftsman and have this at one corner of my pike, equipped with several extra sidings. It is here that used engines, bought from U. S. roads, are refurbished and stored until exported to foreign countries. At the present time I am about to extend my tablework and the Works to accommodate the increased business of the company which has since taken over the resale of cars to foreign lines—a good way to utilize old car bodies. . . . *Richard Cummins*

From ODDS 'N ENDS

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Refer to S9151. See page 50.

Precision Screw Driver Set

A precision screw driver set, with five interchangeable blades, is now available which is ideal for the needs of every railroad modeler. The kit contains five interchangeable blades properly heat treated in sizes .100, .080, .070, .055 and .040". These blades can be easily and quickly inserted into the solid locking end or chuck. The screw driver barrel is knurled steel and has a plastic swivel top that insures ease of operation. The five blades and barrel are stored in an attractive plastic base and the complete unit is protected by a clear, plastic cover that enables quick selection. A practical, precision tool for thousands of varied

uses including work on locomotives, rolling stock, electrical appliances, etc. Complete kit retails for $1.50, or, for more information,

Refer to S9251. See page 50.

New Rolling Stock in HO

To round out their line of authentic rolling stock in HO gauge, the Ambroid Company is introducing three new car kits which are certain to please the most particular of modelers. The first is a Unicel Refrigerator Box Car, a true *scale* model of the new, all-plywood car produced by the Pressed Steel Car Company. The sides are delicately preprinted and lettered exactly as on the first prototype car.

The second is a dual purpose car, a model of the Great Northern Express Refrigerator. This kit also contains pre-

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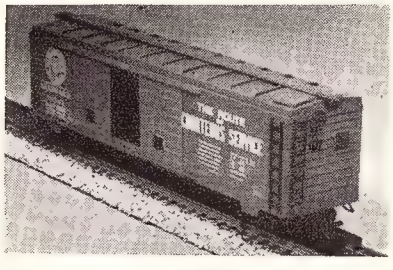
printed and lettered sides, a faithful reproduction of the prototype. Third and last model to be introduced is an Open Platform Baggage Car, prototype for which dates from the late 1890's. Kit parts are richly detailed and include cut-out windows, plastic window materials, complete metal parts for underbody truss rod system, operating side doors and all hardware accessory details.

As with the other kits in the Ambroid line (Open Platform Passenger Coach, Combination Baggage Car & Coach, Convertible Stock Car, B&M Snow Plow and the ACL Ventilated Watermelon Car), all wooden parts are precision cut from top grade basswood. Also included in each kit is a 25c tube of Ambroid Liquid Cement. With the super-detailed parts furnished and the step-by-step instruction sheet, anyone can build authentic, sturdy models from these kits. Aside from motive power and caboose, it is now possible to build up a complete freight or passenger train using Ambroid Kits exclusively. See them at your dealers, or for further information,

Refer to S9351. See page 50.

S Gauge Tinplate Car Kits

The new tinplate car kits now being produced by Al's Hobby Shop of Siloam Springs, Ark. contain all the materials, with exception of trucks, necessary for highly detailed models in S gauge. Kits are available for forty foot box cars and reefers and also fifty foot automobile cars and reefers; decal sets for sixteen different prototype roads.



All parts are pre-cut and include painted and lettered sides, corrugated ends, roof, floor, roof walk, ribs and ice hatches, ladder stock and other hardware parts together with clear instruction sheets. Doors can be made to open and close. These models match perfectly with American Flyer equipment; for list of road names available, prices, etc.,

Refer to S9451. See page 50.

HO Gauge Steel Spikes

The Model Engineering Works of Niagara Falls, N. Y. have now added HO gauge track spikes to their fast

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To further extend their line of O gauge rolling stock, The Bob Peare Engineering Corp. have taken over the manufacture and sales of the caboose and work car kits formerly produced by *Train Craft*. These kits basically are of wood construction, similar to their prototypes. Sides and ends are scribed to represent a tongue and groove effect, with all door and window openings precut. All hardware parts and castings are provided for complete cars, with exception of trucks. In this line you'll find a model for most every popular prototype caboose; twelve distinct types from small four wheel bobbers to the high speed Riders Car of the NYC. Work cars include a boom tender, carpenter shop, pullman and chow car. This rounds out the Bob Peare line of freight equipment; gons, flats, tankers, auto, box, reefers, work cars and cabooses. Look for them at your local hobby shop.

Scale Model Railroad Lumber

Scale lumber, in 22" lengths, is being produced by Ayers Scale Models, packaged in nine sizes for both HO and O gauges. Number of pieces in each package varies according to size, but all retail for 25c. The lumber itself is carefully milled from clear pine stock; ideal material for those freelanced cars and buildings. At your hobby shop.

I HAD an electrician wire all the base-plugs in my model railroad room to a toggle switch by the entrance door. Now, when I leave the room, I *know* that everything is turned off when I flip this one switch. This includes the power pack which might burn out on a short circuit if the rheostat was not fully off, the soldering iron which might burn out or start a fire, and other small electrical tools. A pilot light is very helpful to keep me from forgetting to flip the switch off. . . . *Ken Chenowith*

SEVERAL paper clips will provide wire enough for a television antenna to be attached to the chimney of one of your model houses. Solder the parts together using as prototype any of the numerous types you may have seen. If you have antennae on several homes, be sure to have them all pointing the same way unless a tiny blob below the arms indicates a motor for rotating them . . . *Terwilliger*

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WANTED! HO scrap materials and parts. Details on Request. Phil Lieberman, 817 W. Lakeside, Chicago 40.

WANT January, 1931 "Railroad Man's Magazine." Box 71, c/o Railroad Model Craftsman, Ramsey, N. J.

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Freelancing Locos

Freelancing implies designing and building your own engines but keeping in mind good steam loco characteristics such as "the stack is in line with the center line of the cylinders," or "the piston working in the cylinder is at or a shade above the line of the driver axle centers." Fortunately working with standard parts all items are to the same scale, so the main worry is to avoid having an engine *too* too high, or with too much overhang. You may rebuild some freelance engines several times in the course of years as your discriminatory powers improve, but each time you will have the satisfaction of having something different!

Generally speaking, I have found the engines formed principally of brass, such as the older Mantua engines, Winton's, and a few others, easier to work in freelancing since the brass takes solder readily. A few engines are of white metal and also take solder-too easily! Others are made mainly of Zamak and must either be soldered with some special fluxes or be assembled with small machine screws, rivets, Goo or occasionally household cement.

Switchwork

At times it is difficult to get the correct tension on the points of switches which are set in a plastic base. This is caused by trying to solder the rails to spikes or nails too close to the plastic. To make this type of switch carry the proper amount of current, it should be mounted with a cement that doesn't set too rigidly, such as Walthers "Goo". Also, it is best to add auxiliary contact points often used with switch machines.

Any angle crank control system, for these or any other switches, must be fully insulated. There should be an insulating link in each control as near as possible to the switch. A fibre angle crank is one way, a fibre link another. This need not be done if the control cables are kept 100% electrically separate all the way to the levers, either by keeping them apart or by use of scotch tape, fibre and other insulators. . . . *L. B. Berrins*

Index for Advertising September 1951

—A—
Alexander & Company 45
All Nation Hobby Shop 45
Al's Hobby Shop 4
Ambroid Company 43
Athearn, Irvin ..... 4th Cover
Atlas Tool Company 30

—B—
Bowser Mfg. Company 32
Bussa Model Railroads 34

—C—
Central Valley Model Wrks. 4
Cliff Line 36
Comet Metal Prod. Co. 37
Corr's 42

—D—
Dettmann, Charles E. Co. 45
Devore 37

—E—
Electronic & Hobbycraft 39
Enhorning Industries 30

—G—
Gardner, E. A. 39
Gergele, Robert 33
Goldie's Hobby Shop 30

—H—
Hatfield, Ray 38
Hines Lines Company 32
Hobby House, Inc. ..... 2nd Cover
Hobby Stop, A 41
H. P. Products Company 32

—L—
Lindsay Products 45
Lionel Corporation 31
Little Engines 45
Lobaugh, R. J. 37

—M—
Mantua 36-38
Marnold Company 34
Midlin Models 41
Miniature Trucks Co. 45
Model Craftsman Pub. Co. 36-40-44
Model Die Casting Co. 37
Model Pike Prod. Co. 4-32-34
Model Railroad Equip. Corp. 39
Model Railroad Shop 45
Model Structures Co. 39

—N—
Nanuet Hobby Shop 45
Nixon Model Company 38

—O—
Olney Miniature Train Pts. 39

—P—
Peare, Bob 5
Pennsylvania Scale Models 36

—R—
Rich, W. Nelson 41

—S—
Scalite 39
Schopp, W. 45
Schorr, Fred 34
Scintilla 33
Scranton Hobby Center 30
Shoppers Service Co. 45
Silver Streak Corp. 34
Simmons-Boardman Pub. Co. 41
Simons, F. A. 37
Special Shapes Co. 36
Star-Line Models, Inc. 30
Thomas Industries 38
Toy Trains ..... 3rd Cover
Trost 32
Tru-Scale Models 43

—U—
Ulrich, C. J. Co. 3

—V—
Vavrinek, LeRoy J. 45

—W—
Wentzco Precision Models 41

—X—
X-Acto Crescent Prod. Co. 35

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PLANS Our own staff of practical model railroad editors, draftsmen and artists will double check and prepare plans, diagrams and layouts so that they will be easy for you to read and accurate to build from.

FORMAT *Toy Trains* will be printed on coated paper for clear detailed printing, full color cover, large size; 8⅛ x 11¼", saddle stiched for easy reading and a minimum of 52 pages. Yearly subscription—$4.00, newstands 35c.

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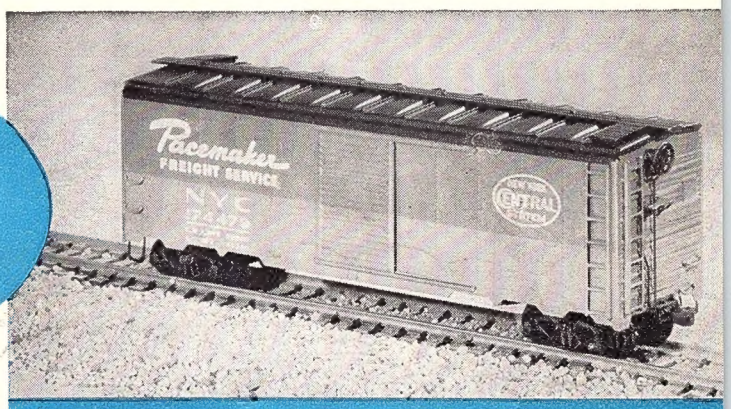

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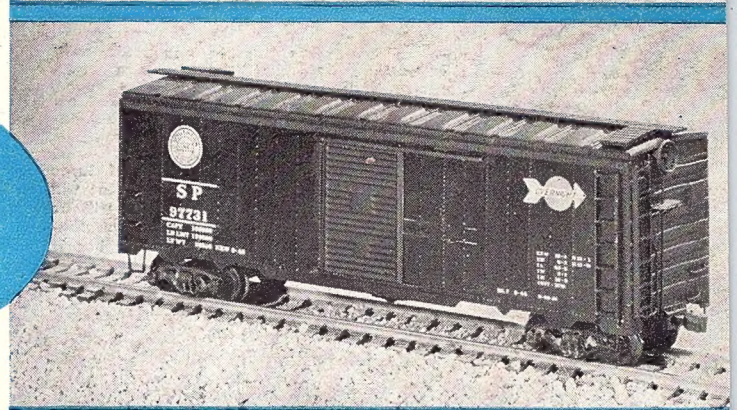

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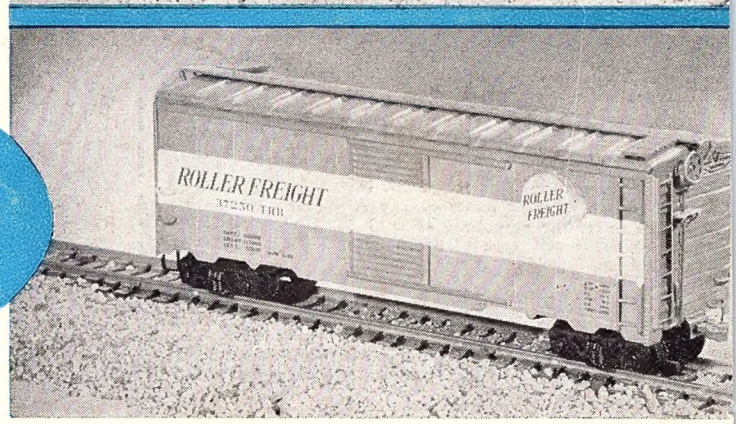

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